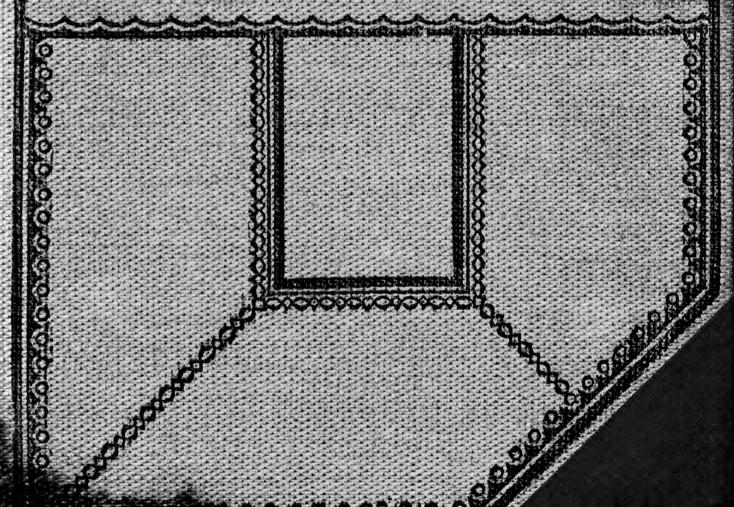


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No. 28

(Apr. 1, 1950 - Aug. 27, 1950)

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2 1950 Palan ngara kaberang north side steeper, apr. 1 - South side of. wooded to top of south peninsula of cliffer fapanere Agaraliaberary! had much in the low black cliffes -way of holes and head Canele toward outploster with paths west bave Vandanus between them, coursing Alopes about cliff? much disturbance. Vegetation has few have miget scrubby largetieer, mostly frest. acomple of less than 2-3 dm. diam. unident. small trees thin undergrowth. with yeller fol. Trees Engertia, Cynametra, Bambos thickets here Malloting, Flacourtia Corkylorina), and there. Lemecarpus, Pandance Parinani e young Carraino in bare spots. undergrowth young dlyfii, various vines Upper frants toward certer of !. terra cor such as Caesalfrinia, trequineti 4 9 La 12y. Dissurea etc. some ferds por de stenden bamboo end of nepeniusula is a frankanus grave with, grass, Lyeofrodium, 141 a 2 mall trake of a with hispid culm Forms Heichenia, Blechnun, up to 3 m. tall, internode melastona, Rhyndrodina white Im. long, chember love, culms up to 10-12 Hedyotis, Cazuarina, con apart. etc. Some Kracaera. lum on this side, mull-Casuaring seems to start only in bourt spots, on s. ologo of same hill. but sometimes persents in frest.

ngarababesang 1950 Palan a Ryestrodium el. Athands west peninsula ofsen used with bandances of me on black volcanie weh, this red soil. Phyllanthus palauensis Hosop. erect shrubs, sparsely branched, 1-2 m. tall common 69 Hedystis tomenters defressed; inflorescences fruflish, flowers deef laverder. common 70 Casuaing equisetifolia common 70 a Lyespodium cenum L. same secondary frest (see 1.3) 71 Flacounting small tree, sterile. common conferent of 72 Lemecarry . 2 malltree 5 m. tall, Caver gray beneats. convinion in solowers white. latex - turning flack. 73 morinda predunculain shruh zm. tall; budg - Chuish. , nad at edge of brief 74 / immins small tree 5 m. ralf. - bud only "palan" rare in 75 Parinarios corymbosa large spreading try 15 m. tall, fruits occasional in tree 8 m. tall, steril. common in primary and small tree's m. tall, other seen larger. common in primary frest and secondary front. Sterile. 78 Cynametra one of commonent tree in primary 79 Trichomanes omphalodes on tree trunk in pies

ngarakaberang - Kerrer 9 1950 Ralay Trichmane, common on tree tunks in trumary forest. The 8 m. tall; Ond only. 31 Eugenia one of comment trees in brumany and secondary freet see p.3 "lolo" 3 L Dendrocal amus, Parbesii Ridley a near det. McClure toming camall bake in scandary frest april 1 (Know welage, Know, road ride, 3) Panieum naxemum erect com mon 84 fatrophy goosyfiifolige. plant fruglish green; thai, green tipped.
There's 1-1.5 m. ralf,
tangled, flowers lavende. common on Koin and ngarababe 85 I pomoes erector craoricantis (Benth.) Rob. oprif, - ngerebe'ed, kom on bank of trendy 36 Hedyotis biflers 87 Edifily alla former, white rane 28 Hedyotic common weally 87 Lacty Coclenium acqueticum Musading. Common 90 Boneria. prostrate, purpling; Clower, white

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03 - Mi morag invisa Mart... -Lee m. Les. "amudelah" leave i variegated gray-green and while florivers while with now purgue dots roward center furing into purple blotch in the wat reloter erect, one thousant on each side, one down and. flowers very fragrant, fruit black, plealing, mot calen introduced by Japanese.

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11-3 annall 16 1950 Malac. Kr - 17 The If y - variable sey 1 = stadel, at I was hel. -weedy doublish in 57504 - Llach la plate indica(c) Volt. dult quen; flower, violet. , in this orient Extremellon contencem culming eading. 5 06 Errilia - 20 net i folia (L.) 21. of lower, per fell, Creek rr. 22 en recele. 5 of alysicaling fractiat, francing a love mat; flowers for fele. Myrily - 17 g = 26 ent thinkets and govern follows or where obsert is y him t. tree sometal, leave CAIR - 11-51 in - Lees I'm will glassy flowers white, Live and the testing. 09 and tipe of brevisoling Sw. each or a recording corner on at, edge of 10 glockiding -2 mall-tier 5-m. tall flowers Conge. occapional inthickete 11 Tierry were they cla is on. Call, stepule, red; steale, for risting from a ld planting en o cel cone u le fourolation, small expreading tree & m. tall, 17 acreia conjunction

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28 29 - Special 30552 por in Conjuliosa . Come - - / - walting End it in tall, fruit. arnall trep or should isalled attended 3 m. la (, with turpentino -11-61-61 e steer ten to then, of way y acrust, worth, stig the -1 -1 -1 -1 -1 -4 = 4 = 4 = 4 . color for the first for idges - 2 mall tup 4 m. ta G [- [6 1 1, m. / to / 2 m.); access increating when chewed, and our (all) - place es estate, fing ant. At I Careline Care spice Com , the constant of cities 56 gleiche wig liveni, avery lever, eleve. towns obmine of intractions 57 Gleichenig Einearis 1. Geruging derimant en love slope forming tunglas - 1 m. deef. 50 Tricles spanner 'elean' back mild. dominant over lange a earingerand growth, - (a tiging tempera 1/2 this in thickets on backwill, Luck together - and while, eggs 59 (realy blue caroliners - simulation bon. lace or effectioning ex o-lice of we the 60 Variation en de la company Como de la C; 61. I regardent in in to million to en freeit green. Effect better 12 devisea frus meneral -small treps in the Callen common in rancing fourt merely taller), later turning leaves gray beneally "tonget" cause, were desired

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99 'hefrentler min of offen Low vegetation on crooked built, also in thickets, where it becomes all more, variations in size with chalites 44 1950 Palan

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32614 Eugenia 5 carional in post

5 15 Ficus common in front

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3 17 Pifer

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3 18 Tectains

april 11 flying at low alternate gages it was passible to the welcanic a en ar of light red soil.

Much of it is seriously surded This, seems and the anily broken the anily broken to the action 1946, though it could be suitly broken of it. I note control fully be to of it. I note control fully be to of the strip fully be to of the strip fully be to of the strip is not a party with your of it.

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reg very luxuriant and bright-gellow-gun.

Elfore (121 - war and 1600) care field on all le en 2, end, tout one and linear grad a lift total

a cacia from wend beals spreading in many ylacer.

, much of is saile burned was recently.

Lake Hagery a very really filled in with regetation uncl. Carge areas of a broad-legted tolant. Leavola very conspicuous et. green masses on cliff. tops north end.

many windbreaker on s. side of Carnaring. Cliff to stay in many places morain geen patiles outlined in light gring.

14 lach soil terrace e. of Caroling - vidy very smooth, not which involed by bush. Pasfralum dark hhahi green

through, to greend

Facilian Green G. C. chiffs many base ties of the consequent of except to monthly a consequent of the consequence of the chiffs above will ago chiffs above will ago of the consequence of the consequen

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64 1950 Ha in a 65 ((cen (1/--12) ent after water Com- man to fine the soule as -in againg turny, (a gola ra, % - sed, Consol often extens cond realthing carriers Many gen Colling fil entations & s. end. - carrer well thay its il-slighter, thicket. her foreit - 2. e. wand. of ole (1. E ocen recan forgetintercourses of bunning. of thes. Hen gray crosoled E. - rich C-n L fruit & plantakion fully Dr. of hory. -bollown. olam of cations Le folaris. Le tloman Talofofo a en forested. Cargely Crothen forest one - Cantle plantation whole to nten of) storad 1. we land fire mid Talofofo Vill. forestron -2 lection the free + - you wines Truck from forest quero on ridge Ev. of Camp Witch Jun 2 cd , on more you 4 Hora with pattern quite -pattebel of Thantation Hoteld Hand A - D. Turven a webly forth mostly coconed flantation.

66 Truen I tavingade or co Extendent Cocamil poles out the color of in the end yout the and is to early extres or extrest. el cach, eller ord me at Ketidian fox. 5 - + - 2 - F(c) / - 1 - 1 I for the la ye altore pur Aleking terrace fred, sof Richards Schard and grown over 1/2 Paint excellent for t. 1 4 8 - Low comment planten 1.34 A) of transfer feet mays. geo C cliff freet Tumon Krey & Keept -Lettery col To well-ich alun /25. Elea in grand worth in Faryce (Garing) for inclinated. :0. 07 - 116. Fredy Bad foother 4. quan my fing loith Painddub. y Cycai to de ever for evere of. and westrian beit - toll free of ren gord fortale finite. ch/7-1. The many be really weenday forest -o.c. of rad=> fields · (remany & reft for avadiced through. ford financy Good beart formulan, regetation aring worth court. Ad Witipfuture mall 1/2 atelog

72 1750 - 2000 26 is all a tipe lace to person to have In a second the second to the second to of the same of the will even him to the Entada phaseoloides large Ciana, up 3 15 cm. corning 42 Justicea much branched her occasional in about 1 .m. Lay, feetals yellow, Jugacia wat place 4/3 auxoling nome einsties erect should 1.5' -m. ing occasionation offering scedling, me, 44 Cycar circinalis Love bill volcario soil 45 Intria lightings -steril readling. alluvium in volconie a eq. but - rough limbelow - witcom. the Pola monactory ent merged. abundant in food formed by dam (with

74 1950 Johnston 9.

common around buildings 32447 amaranthus viridings. 48 Plucken indica (2.) Less.

sterile young plant.

dense stand, obviously soun.

May 27 - Head of Broad Creck, South River anne anundel G. Bluff, of loose sedimente

50 guereur bicala Willde

rare with q. montana overhanging water

Latest spring in
Tather O'neill's memory.
Lome myssa with leaver
not fully grown yet,
leaver thin flowers,
leaver thin.

Jaylunacia bareata

Lymia mariana all in
blown Kalmia latifolia
in but.

flowers dark red.

still rather young and thin.

June 5 - Fort Buffalo, Imi. s.e. of falls Church watch of almost pure g. corenea(?), g. velutina (?) g. montana, en gentle noth bacing slope. Close growing even aged stand, trees up to 10 inches dram, clean trunder, about 15+ m. tall. a few older. branched trees scattered in stand. Stand possibly 30 years old. Canopy closed. 3-4 dm. tall, of Phododendron nudiflorum and Vaccinium vacillans (possibly some garylussacia baciala), and one about 1-2 m. tall, of young trees, mostly June 5 Sleepy Hollow area 3/4 mi. 2. of talls Church 37651 Kaza established in old field and along roadside.

1 mi. s. of Falls Church brottom-land near stream

Myssa sylvatica, very few red or black cale, no other vales. I no or two Carya sp. very small. no myssa evident The 3-4 dm. story is close enough set to be very evident, but the plants seldon truck The second story is sparse - plants every 3 - 10 m.

arching, serni-reandent shoul 1- 2 m. tall, gerwere white, somewhat fragrant.

december of base. prostrate slightly ascending trift. prostrate to ascending tufts.

80 1950 Add Leolland Orlaney ys. June 27 - the fair Island It grass- covered Though of the Onteneys is at might be low surrounded try clifts heather, with no high on the sieward woody regetation except side, low on aprith, whent or pleas to be a and east. Leen from fred trees in the timeyon the ship at about at the trighest troins a me mult, the on the island [Gian, English island officers to Coloniet says probably webs Lweden gothenburg June 70 - Gothenburg Botanical following is dwarfed garden - natural garden. on the heath plants, m. tall This is a palch of recently being as much as 50 years old. undistrubed regetation - original The soil here is of naw regetation is not known in humus. In sheltered draws Liveden, at least in there parts and benches on this there containing rich woods is a birch-frest with in a valley, on calcareous some mosture of Pop. trem. substratum, indicated by and quereus. The birch is Mercurialis, with querous not reproducing itself, and sobry, q. petraea, Fraxina, the oak is replacing it. The tros ace platamoides, a, prendsoaler are much bybridged. The pleaterns (not abundant), l'opulus fern flora here is l'templium tremula, Fagus sylvation, et. agrilinum + Polypodium vulgare. with sparse but definite The ground cover is of Vaccinium undergrowth, on mull mystellus, V. vites-idea and soil; surrounding are melanfrynum fratense. low dorner of granite or grains, In the open heath are patches of reddish in colo, with arctostaphylos ma-usi. mostly open heath of Kod. roll 1 + Pan roll A lange Callying with birches taken in various situations and l'opalus tremula. The -in the rander, mostly in woodsoud heath.

July! Kanebo, near Jorlanda village, 40 km. m. of Goteborg striff of rich woods. along base of cliffs of iron greiss with enough. calcarerus malerias to enrich the said nery considerably at the base of the eliff is a low talus of great blocks, covered with moss and ferns, esf. Dryofsteris linneana. several other larger Dryogetein and a large colony of Struthiofiteris germanica. In the crevices of a road ent in the cliff are tufts of Woodsia ilvensignal asplenium septentionale, with some Polypolium vulgare. The woods are mixed, with some birch, esp. around the edges, oak and beech common, the beech, est. reproducing very vigorously, an understory of Corylus is very prominent in this woods, mixed with young oak and beech. The ground cover is of Oxali, accessella, Melangyma silvatieum + M. pratonse anemma

nemorea, patches of Vaccinium mystellus, allium of (in wet blaces). Maiantlemen libolium on higher sport, and stumps. This, woods has not been grazed for many years. a spart in a small side quelly has been grazed. It has kiceg abies and more birch. Here is a colony of danicula europala. the vegetation and flora here are much like those of pkane in southern hweden. this is about the northern limit of beech fact in western Sweden. M. grimvall . (Medd. Fr. Gitel. Bot. Tradg. 16: 195-214, 1946) has described this site (in Lwedish), with lists of species.

Bet. here and Jothenburg The landscape is of "roches moutoning with flat morainal or Toutwers definit between. The noch hills are bare but for moss and funificus communis, which assumes -various habits Inflatter oner and frost-ologies are heathy and birel- woods. Typical s. w. Swedish landscake

1950 Sweden Bohuslan. July 1 warming Rich moist decidences Richderoods on flat ground at base of greensing elift with some calcarence material, herbaceous ground cave. 32656 Wordsig ilvensis tufts in crevices in rock of road cut 57 asplonium septentrionale dense Tuft, in crevices in rock of, road out. 58 Dyapteris austriasa talus of large blocks, footof elif. 59 Dry ofteris lik neary aboundant on talus of large blocks at foot of cliff (also in forest floor) 60 Paris quadrifolia on front floor, accasimal 11 fanicula europaea scapes erest, flower white medicated colony in formerly gra god forest. 62 Melica nutans oceasional on fracit flors 63 Lugula pilosa tufts, predunctes deflexed. common on frest floor 64 Stelling nemorosum weakly erect, flowers white. local en finest fear 69 Tyrola mina flowers white. 64 Dryoptens felix mas vecasionel on frest place. strizerne overt. 67 Cesperule adorata erest local, dense colons on forest flow 19 Galius de dustre flowers bright yellow, 69 Galing polistre decumbent, fls. white, 4-find edge of mords - presture in muddy stare

950 Liveden Blekringe July # - Tubbaryd, immediately w. Kod roll 2 picture of decidences of Karlshamn wood with wheat in f.g. strip of beech - vale - linder frest at base of well ridge. the 32681 Festura altissima loose small tufts, evert common in full shade of forest 32 Lanicula europea rare in shade 83 Campanula persicifolia flower blue-violet. occasional in this woods ascending, weak, flowere white. 84 falium mollugo along path between meadow and frest July 2 - Skarra, mansing Kod well. 2 Pan roll A. shots near Karlshrona, on old estate. of large trees, of woods, Kirly mixed words. Trees and of mansion. also - before - of Vaccenium ground near manain - mainly quercus robus, 2-3 m thich, 500 m cover in words nearly. more years old himse near beneath, incl. a colony nattoaly - river bank woods of Osmunda regales, this largely great vales, with quite luxuriant, more so lush herbaceous veg. Than commonly seen in U.S., frianuly larger & closer tractier. - Lake niklastnfisgolen, near nattraly - "entrophic Kod roll 2, Rosa. several lack, with fore of cladium views of Cladium and mariscus in edge of water, mass, slightly qualring, back of it. Good from of ophosite strong late. genation visible across lake - comper, broad - leafed trees of at least & belts-from beach & willow- proplem - birely.

1950 Krueden Plehinge July - small by bog in [an the road & this bog woods is bem. w. of almanyd. is a frest reserve, protected with deep of hagnum against the foresters] and great mounds of flytichum, semi-open. 32685 Ledium palustre slender strubs to 1 m. tal , small colony in boy - fruit green. 1 86 Vaccinium oxycocio flower wee-trunk, rare in boy fruit immature. July 2 - Lake Lanner L somewhat south of "oligatrophic lake" with sandy bank with Drazery this spruce frests become the dominant mundalig a strip of myring gale regetation - oak on rock ridges around edge 2 1 87 Myring gale shrub 1-1.5 m, tal. July 2 - Lake Hirnen oligotrophic lake 88 Lobelia dortmanna fleshy, flowers pateblus lavender. common in water at edge of lake July 2 - 7 m drained strallow lake bed and margins - now a grany meadow 89 Ajuga prjamidale occasional in sloping marque in gothing grass 90 Maianthemum biftlium near, but not under, trees, margin 91 Thesium alpinum inthingran flowers white neme on greatons sloping marging 2 92 l'olygala vulgare prostrate, flowers the occasional for stoping many

July 3 - Great alvan between Vickelly, and Lake Möckelmour The alvan is a loved flat open plain in top of the low platen that forms the main part of the sland. be plateau is of flat bed, of reddish engetillen dementer with little soil on top, except for localized morning deposits, with a ratio granite brulders. ine se fir in sow ridges covered by a sparse since of Junipener with a few Lyoung Picea, and ques between West of this are extensive flat plains of thin dwarfed grass, inequela areas of more brequirally hummochy vegetation with occasional junipers. Votentilla ffetter enta, etc., smaller ourers, stightly defreezed of grass and Carez, other fran-like areas of frue stands of fedrum album and a yellow fld. species, some areas dominated by belianthemum orelandicum. East of the maraine ridge is an extensive are a of flat limestone cracked into holygenal, often fontastias

astonishingly geometrical patterns. the cracks are of varying width and defith, of gode after filled and marked by lines of vegetation in dir Tilh winds ale otherwise base with surface. sometimes wide enough to have more merophytic plants alown in them. truther enest and extension fonds in a morgrany region. The fronds are partially dried up, have a layer of fine calcaneous mud on the fottom, with Edinodorus sp. Krigus af. etc. The wet meadow like feath a car around there are grantly Equisation variegaling , he aspect at this time, of most of the vegetation, is type with listens e under fort, gasses on this soil or transch very dry, on thicker soil still green, on areas too face for anything else, and low enough to collect a little water in wet periods sedums an abundant. In wet seasons this is undoubtedly a hydrophytic association. The contract

between submerged and almost desert conditions reasonally, with first in winter, is a rigorous environment that I must exset a tempir selective effect on the flora. The flore is an arraying musture of species from various parts of "Europe - some species arctic, some from the steppe of Russig and asig, some from 2. e. Zurofu, some from the defor, etc. There are, in many cares, length disfunctions of, range. The effects of very slight differences in elevation. rearrely prereptible physically are very marked in the vegelation, producing a most irregular pattern. flat alva, a steppy, with thing soil and low vegetation \$ 693 Circaea Entetiana loin deep crevices in limestone 94 Dyspleis robertians

loven deep enerces in limentine

rank in grassy place in

common locally in short truf

2 y 75 Prunella grandiflora

Junipeus remb

read wells 2003, Can rolls 142.

wears of steppe, of seathers
album patches, of seathers
functions communis sent,
margin of dry frond with
frentillo frutures send,
of crevices in limestone
and vegetation marking
them, of ever tie boulders,
of patches in regetation
marking slight difference
in elevation, etc.

encel calyx red, corolla printies, while, stigma red.

flowers deep blue violet.

96 1950 Sweden Oland 32697 Promise with reflexed 21 monde jetten i deser cavender Betal. o' execting 1 / 98 Jerminium e ect, flowers make ye in green, with trong honey-like order. in short of and lung. 199 Juneus in bare, descended food bottom funiperus communis should Im. (all others common on grassy slightly staller a mure depressed, raised places very variable in habit), - fruit black with a bloom. 2 1 01 galium poliustre flowers white. in wet grassy places 2 vor Egnisetum variegatum det alson very common in met grass near find margins 03 Ophinglossum vulgatum leaves Thickish nather yellow- ques. small patch in this grass 04 Galium breale L. locally common in thingrass 2 / 05 Linum calharticum flower white with locally common in this years - yellowich center. 06 Galium vening blowers bright yellow. common in grassy hummodry 07 Potentilla erecta flowers tright yellow, very common generally, 4-marris this in grassy hummochs rare on bare limesting flat Helianthemum oelandicum grant depressed (nowdry abundant on large areas and brittle), flowers yellow of timestone as dominant or subdomined

1950 Lweden 32710 Calaminthy occasional in thin grass 11 Hermania ereal in desireated from 12 galium palustre local in descented provide 21 13 Lubularia uniglorg Thundant in desucated pools 14 Cynanchum vincetoxicum Common in cremices in limestony Primula painosa very local in sparse grans 2 16 Globulana abundant locally in trup 17 achilles millefolium i. occasional locally in thin grass 1 18 asplenium norty many in crevices in temestons 1 19 Arhlenium Trichomaner in crevice in tempetime

Oland 99

anomatic herb, flowers
blue-violet.
very prostrate, yellow green.

flowers white

leaves fleshy, stameny
evert in anthesis.
evert, flowers crown white

leaves wery white beneath

past anthesis

evert, rays pink-lavendly

100 1950 Lweden

July 4 - no sion just south,

of Lenstad

Binch fromt bondered south,

morth by cultivated card,

on south gradually

fading into the alran.

The binch is, on marind

male ial with some

calcareous with some

calcareous with some

this much between 5 + 7,

(acr. R. Flerner.) sometimes

this much within a few

feet Callung occurs here,

even within a winch or two

of calcareous web.

32720 Euronymus in bedges in cultivated district 2 1 71 galium mollugo pustand in staded enclosing 2 12 Vermica spricata nave but worker less general on more barren parts of alvar. 2 1 23 ancra fraterio 6: common in more query area; 1 24 Helianthemen mulgar is petracon common locally in thing as, 2 v 29 Ospenila tincticio orcasional in deep energies and in place stelling by Congles and Junipers V 24 Cotineaster

in Crevices in Comestone

Just outside the frest we currencely or enouth meadows of molling. with as undant - solger of several brinds and Lesleria. Parts of This ac very wet. the alvar tree is like the large alvan, but more completely growing int still with large wear of extremely thin vigolating and areas of trave front rods. dreas of juniper and common. Total worth is an and where fair sized Englus (3-4 m) grow in the ceries. showly fruit green.

- stem ascending, plower white. erect, plowers blue - wirlet.

-flower yellow (no range is centy).

weathly erect; shings in conty).

orange; plowers white.

devoy shrub 4dm. Tall; fruit scarlet.

702 freden O-land 2411 32727 Rhinanthur erect, bracks drawn white Occasionaling their grace - ela lite with deep from to - Caleral was brong profile; -curring yellow. v 78 Kapping of lower blue local or a const was in the 1 29 Linario minus L. eventa living huma common lically on almost Agrees about out life white willing 2 V 30 Corner surgering L. in ledge was prayed to stighter from the fraid of each. Kird . - - Cli C & Marian. There's 2 -A lace derid of vegetaling view of Morenie march. Crey us veg. I organalumin A inner construction of timed, wet sedge minden with Word + Claphan arguing about care &, in our tales, pre- sid front protygons esite of wearing a main halman caille. The water, receipt and north of July 5 - gardby some fields recently abandoned Landy fields, grazed, with from cultivation, others anemore prateris as most semi-natural, with dense tuy conspicuous element Land role ? Pan 31 frabrosa columbaria L. flowers dull magenty-fring. common in grazed freed 32 Carez obtusata Liljebo. common in tury on raised eloots 1 33 anemore pralensis ered flowers command, petal, alrundant in grassy field lavende, refrals tronge purple 34 Pencedanum overselinum (h.) Moenely flowers white fruit common in recently cultivated field immature.

104 1950 Sweden

deciderous strip bodering vad in prine woods

2 / 37 Ononis avensis L. grassy wadside in pine wods

> July 5 - near Imantofishing Lthis is a ruin of an ancient fortification, a carge circula. wall, built of rectangular with fragments, stacked in orderly fashin within, just filed up without, endozing rectangular crowded structures] I morediately about the fort is open orale woodland, with guess between. a short distance away are rich woods broken by meadows of deep grass and her regetation, wet soil, began and - and by Orchids abundant many sedges, potentilla erecta, etc. Words of Juencus,

r 1 38 Ulmus laevis Pall. tree mother in woods tree 7 m. tall, fruit green.

flowers bright yellow many handles from strong nort evour, flower bright rose, malodorus.

Fraximus, Tilia, etc. with usually, a conspicuous seemed story of Corylus, best ground cover. The whole is very rich in species.

In places it is thinner, the trees amaller. In a few places, where there are deposite of acid merainal malerial there are small heath-like Platanthery bifolia, etc. the at one side of this is an so open wet meadow with various sedges. Tis prendacorus, kythrum salicaria, etc. & many photos her (Kod. roll & Pannoll b) of the old fort, the small meadows in the wood ording, and _ some of the wet meadow.

tree & m. call.

bright yellow, 4 merous, erect, flowers greenish.

erect, flowers magenty, not maked except base of

not maked except base of eif white, leave clear green. shout 1.5 m. talf, twigs greenish bown, plowers white. Thult. 5 m. talf, fruit

immature.

bracks bright frught,

corollas yellow "Avensh soldates"

leaves purple sportled,

Plower frink pale to bright

with mavon purple marking,

flowers white

erect

shrub 3 m. Tall

flowers white, style defleged.

106 1950 Liveden dade topper 32739 oreasimof in openings I 40 Daphne megereum occasional in dense strade 2 V 41 galium breale common in opening, 42 Potentilla erecta very common in apening, occasional in openings 2 / 44 Orchis common in openings 2 · 45 Cornes sanguinea common in Edges of ofrening 2 / 44 Khamnus franquela common in edges of openings 2 v 47 Melampyum nemoraum local in woods 2 V 48 Oveling maculata common locally in small ofsening. 19 & aspenda tinctoria 50 Brachoffordium pinnatum rare in opening is Conglus orvellana L. abundantiesecond story 2 V 52 Tilia conduta common in frest 2 153 Pyrola rotundifolia

occasional in frest

July 13 - flockholm archifelago - seen from Court. The internal and rounded glaciated marses of granite and greis, varying in height from orward to probably 40 - 50 m The inner islands are largely evered with coniferous frests with a scattering of quencus, fraximus, Tilia, Lorens, etc. and with a ground ever of Vaccinium. Birch and Formelos tremulos are common.

bolanists, but since there were erect ones growing beside it, the form is rather obviously genetic.

Kod. Rall 2(?) +3 Van Roll B. many views on Fangolian

as the outer frants of the archipelago are reached the Pines and Picca largely disappear, leaving a strented birch firest in the more sheltered sports. Betula publicens dominant. The soil in these woods is soft and in cover langely traccinius. In shallower defression the peat is covered by a mat of Calling and Empetium. I'my wet bogs and larger boggy meadows

are occasional, with

various sedges. On

The landward side are

beaches of large rounded

pebbles, with galium paluste,

Scatellaria of, glaus maritimo etc.

Occasional patches or individuals of licea and even linus may be found, but not in a very be found, but not in a very fernishing condition. One colony of an absolutely prostrate from of licea abies was seen ascribed to physiological reasons by some of the Livedish

July 13 - Island of Langskar.
Björkskar archipelago,
east of Stockholm
Low rounded outeropings
of granile and greiss
with low bird frest,

37743 Empetrum hermaphroditicum on peatry places

in sheltered place on very shallow soil (with # 32765)

1 V 65 Epilobium in sheltered place on very shallow soil (with # 32764)

3 v 66 Potentilla spalustris in boggy spot

in peaty place, edge of woods.

2 v 68 Scipus

2 V 69 Viburnum oppulus L. ? rae in edges of wood

2 / 70 Valeriana officinalis L.

2 171 Veronica officinalis L.

72 Fragasia over places.

2172 Fragaria verea L.

2 173 Sentellaria grassy places in deep beach of loose winder sometimes
in the
chiveen
ges.

sub; berries.

to

nding, plish, petals

low strut, 2 dm. tall, furit green, slightly 4-sidel.

erect, culms Terete.

flowers white, sterile ones showy, cymes flat topped. erect, plowers prinkish.

flowers light blue - lavender.

smoother flowers white: fruit deep red, with delicious flavor. flowers deep blue - violet Uppland

113

Calluna, and sometimes small brogs in the depressions between the rock ridges.

depressed shoul; berries. blacks. creet, flowers white.

flower white

stems assending, ealyx purplish, petale maron. low shrub, 2 dm. tall, fuit green, slightly 4-sidel.

erect, culmaterete.

flowers white, sterile ones showy, cymes flat topped. erect, plowers prinkish.

flowers light blue-lavender.

modern flowers white: fruit deep red, with delicious flavor. flowers deep blue - violet

flowers white, 4- yarted.

fruit dull amber-colored when rips, pleasantly acid. 'hjortron' flowers blackish-purple. small plants is open, tall ones in deep grass and shrules.

erect; flowers yellow. flowers blue - violet.

erect, berief reddish. erect, flowers nose finde. ered; flowers deep magenta should, m. tall, flowers pink, fading white "nyponros"

1950 Liveden galium palustre one colony seen on deel beach of loose rounded rochs 2 175 Kubus chamaemans common in peaty place 1 76 Juneus gerardi common in marsh 2 / 77 Ophioglossum vulgatum L. abundant in grassy, peaty place 2 178 Elevelaris palustris L. common in march 2 / 79 Lenecio very local in small soil deposit in depression in vols 1 1 80 Myssatis rare in shelter of large with 2 / 81 Corner success L. ernmon in patcher of birch words on peaty soiland Sphagnum V 8's Epilobium rare in grassy placer ~ 1 33 Fythrum saliearia occasional in grassy placer 2 84 Rosa macrantha? orcasional in open places

stelled by with

116 1950 Lweden labels up 3-16 adelas; Low rounded glaciated hell, with mixed woods and birel words, meadows and pastures 32785 Campanula open partine 2 1 86 Filipendula common in offen parture 87 Galium break edge of pasture, common 33 melanfignen edge of frastine and words 2 1 89 Rujula 190 Viola trisolar plening in words faatches on bare voll on top of bill, in open. 2 v 91 Polypodium patches on bare sloping lichen-covered with 2 192 Betula vernicasa when patch of woods on flat ground 93 Pinns sylvestris emmon, semi-nalural in wood, 2 / 94 Betula nemicosa open tratch of words in flat

195 Campanula persicifolia

common in weedy roadside

flowers blue - violet.

flowers cream - white

erect, flowers white

leaves dark purplish green,
flowers halo yellow wite

hight yellow lower lif.

solitary culm, accending.

flowers blue - violet and
white.

white but very rough and only near base, twig pendent tree in m tall.

not above, very rough and contry near base, twigs pendent.

erect plowers deep purple.

32796 Vermica. common in marely spot in postus 97 Myosotis rare in marshy sport in partur 2 198 Kanunculus common in marsly spot in pastur 1 199 Galium molluge L. rare in obening in woods 32800 Filipendula occasional in shere of lake 3 v 01 Potamogetin common in water 1 m. dealy. in late 02 Kanunculus rare in water I m. deep in take 1 03 l'teridium aquilinum common in birch woods

on walry soil.

The birches seen in some abundance on this island one almost without exception of the vermeason type with a varying amount of coliner on the lower trunk, no puberance on the leaven. The leaf outline, margin, etc. and the habit, amount of weeking tendency of twig, etc. vary greatly.

flowers feale lavender

flowers light blue.

flowers glossy yellow

flowers white.

flowers cream white.

stems ascending, flowering

spiles emersed at anthesis

ass submeged before and after.

flowers white.

Liveden 120 1950 Lappland, Tone Raffmale 121 offuly 2 z - abiako with heath - libre of renings low hilly country with and meadows, with Betula certilosa woods, Empelium. spragnum. Vaccinium ground cover, 3 7804 Laly I so which in sparse woods fruit pale yellow. 2 / 19 Jalia for simile and the word low shul - dix filipolia? in span words fruit yellow low shoul halise livida? in sparse word or halix bioritar arbuscula in sporter hearty very low shrub. - fruit yellow 2 107 Saging procumbers ple yellowing greant, in other trampled place on bare gro mot flower tetramerous, straw-colored. V 10 Luzula pedially drooting in open heath arctostaphylos alpinum prostrate, ripe fruit in open sphagnous heath reddish, translucent, sweet. 12 halix filipolis showb 2 m. tall, in loge of woods glancon boneat {. Lalix glavica should, m. tall, of in low brush at edge of heally - leaves gray. 19 Vaccinium uliginosum fruit immature, plant common in sphagnous heath very low. 15 Tofieldia filiformis getal white. in sphagnous depression in healty 16 andromeda polifolia beaves glamerus breneath,, fruit rose colored. in sphognous heatly 17 Carex vaginata in spliagnows depression in tooth 13 lolygmun vivysamm white, in shhagnon heath

122 1950 Lweden Lappland, Tome Lappmal 23 32819 Betula nana should of m. tall, depressed. common in open healths 2. 20 Cornus succina bracks white, flowers occasional in fortit _ black. 9 v 21 Kalix glanca shrub, ni-tall, gray. common in spenings and heath 3 1 22 myosolis flowers from bright in sparse woods - sky blue to bright prints. 3 v 23 Bartais alpina L. erest, upper leaves and in heath _ corollar very dark purple 4 × 24 Betula alba var. tosturas small tree, 2.5 m. tall, dominant tree in frest back yellowah white, twigs not drooping. 25 Chilobium davunium L. flower white, pendulous. very local, insphagnore depr 2 v 26 Utricularia -vulgaria flowers puple, leave common in sphagoous treats trale green, wireid, trapping insels. 27 Vaccinium vitis-islaes very low, plowers pinking common subdominant in fred floor white. 28 Linnaea Grealis blower pale pink, deeper abundant in frest toward tube.

July of Sintatjano of morth, send of Sintatjano ont, Katterjäkk River 500-700 m. at the bottom south of the viver are some extensive sphagnum bogs, with Eriophonum very emspisuous, and with considerable area covered by a serub of Lalix, principally 9. lapponum, giving a silvery gray cast to the regetation. In the open parts beingus caespitosus and various Ericaceae form humands.

The willow goes up the slopes a hundred m. a 20, with Empetrum - Vaccincum heaths. Betuly nama is occasional to common. above this the regetation beennes a morair of trufa very low heaths -Vaccinium myrtillus - Empelium halix herbacea - grass + sedge. searcely in such altitudend arrangement as we expected, but apparently correlated with expression and persistence of snow. 5. herbacea replaced by 5. polaris here and there - where there is some Ca, acc. Du Rietz.

32829 Dryopteris linneana
very local on slope sheltered
by rocks

1. 30 Phleum commutatum
occasional on tury slopes

1. 31 Viscaria alpina
local on tury slopes

1. 32 Luzula campestus va.

0 occasional on tury slopes

1. 133 Pyrola minor
rae in halis lapponum serula
common locally on tury slope

2. 35 Lycopodium alpinum
occasional

spiles purplish flowers magenta

flowers pinhish white

prostrate, forming small colonys by numbers, spikes erect.

126 1990 Lweden Cerastium cerastivide, (L.) Brit. occasional on tury slope, 1 1 37 Pedicularis lapporting 38 Lycopodium clavilium v. alpertie. oceasismal in delvis 39 Diahensia lapporing occasional or rocky sloper 40 Veronica alfring L. occasional in rocky slopes athyrium alpestre common on through slope, 42 Ranunculus prygmala in wet bottom of shallow novin Kanunculus nivatis on tury slopes, losaf. 44 falix polaris local, around small frond 45 Laxifraga stellata occasional in wet places 46 Lycopodium selago locally common on trufy stopped 47 Salix herbacea dominant over large areaz 48 Potentilla procumbens orsasional in rocky stopes 49 Phyllodies caerales very common or turfyslope 50 anthoxanthum odoratum b. (4, alp mum) common in grassy places \$1 Localeuris procumbens common on cury a rocky stopes 4 1 ir halix herbacea dominant ver large areas

Lappland, Torne Lappmant 27 prostrate leaves purplish- green; flowers crean - color. - prastrate flowers white flowers bright bene, _ tubé white. forming masses in . roch crevices, etc. flowers yellow feed, flower tright - yellow. forming mat; or. - yellow spot near base, with forming a close mat; or - parts plants scarce. flowers yellow, petals - very small. Garning mats and tummochs, fils. rose-purple. prostrate, mat-friming flowers was - pints mostly trution forming a close mat; & plants

commoner; fruits red.

1990 Lweden 32853 Cassiope hypnoider (1.) . Ilm common on lungy slepter 54 graphalum supinum L. ennon on tury stopes 2 1 55 Epilobium anagallidifolium local in edges of oflagmum bog in Salix samb 2 1 56 Trientalis europea L. common in edges of sphagmum 2. 57 Lalix glaves oreasismas in splragnum by 21 58 Vaccinium myrtillas L com occasional in splragning bog (very abundant above on alother) occasional in sphagnum bog 2 / 60 Crisphorum angustifolium very common in sphagnum bog. 2 V 61 hairpus caespitosus dominant in open parts of 3 V 62 Lalis lapponum sphagnum bog and on lower slope. Last 6-8 shots on Kod. Roll 3 n 4 a few on Pan well E.

Lappland, Tom Cappmal 129

prostrate

involure Clacking.

flowers pink

flowers white.

very low single stalks.

stems grees: print

immature.

Thaquen bog.
shrub 1 m. tall

July +4 - mil slopes of Kappastjan Mr. above Kopparasen station steel slope of measurest that is gruite calcareous. on the lower slopes as spare buch frest with the usual Empetrum - Vaccinium of ound cover. Here are marshes and wet meadows, and generally richer vegetation than resual for the region. On the lower slopes are patches of Lalix lands about, m, tall, S. reticulates abundant in open places, 5. mysinites abundant brining a low ground cover. with 5, hastata. In the upper edges of the freet 5. nigricans sep. borealis is mixed with Betula and about the same size.

Kod. roll 5 langely taken her

The ground is covered by a dense mass layer I dem. deep. but of other mosses than Aphagnum. Many herb species are found tres. above, this is replaced by a clense thin truly a mat of Dryas octopetala which evers large areas. It is here and there replaced by this mats of Galis reticulate and higher up, by 9. polaris. on high expressed ridges there are cereas almost devoid of regetation, also arear where snow has only recently melted which have only morrer, largely protonema. In the bare windsweft areas a few cushion plants for you, often forced to one side from their nort crown by the winds. a small colony of Carex narding is in the most express places of all. On all the slopes solifluction is very evident, sesulting in step-like slump ledges. In sheltere freaces patches of Cassiofe tetragona are found.

950 Lappland. Tone Lappmant 133 Levelin Liellaring memorum of montang " wear, supported by other in opening in words - plants; flowers white end, flowers bright 64 Trollins europaeus L. local in edger of words -yellow. 65 Gentiana nivali, 400m. flowers brilliant blue. local, on Top of lage boulders in edge of words. 66 Erigern umflorum L. 4750. ray while, involune local on stopes and on wels. truplish green. Potentilla Crantzii (G.) 9. Bech. local on rolea in opening in un? 475 flowers Enght yellow 2 168 Lalix Canata soom. should I m. Lale. common, with G. glavea 69 Ringriguelly alpina 475 m. flower white, marked on morry sloper, recarring with yellow. 2 : 70 dalix myssinites 500m. 3-4 dm. tall, forming low dominant over large areas on a rope, serve. 171 Viola biflua L. flower brilliant yellow. abundant on olopes marked will blackish frught, 172 Pyrola notundifotia 525 m. petale white, style was. rome in Salix scrub. 1 v 73 Campanula uniflora 900m. erect. rase in grassy naving 2 , 74 Cerastium alpinum blowers white. common on upper slopes in Dugas very V 75 Melandium apetalum (6.) Fengl caly, with black ridges racin sleet grassy raving 1 176 Dryas octopetala forming dense mat, flowers dominant on most upper slopes in cream white. extreme anditing 77 Minuartia rubella rare on high windsweft bare gro and, recently free from snow. 77 Languega tenuis 1000m caly puple, corolla rail on ground just recently free to snow friendrich white.

134 1950 Kweden Lappland. Tome Laplamanh 135 32479 Larifrega cerma erect, tip modding, bulbils oreasimal on slopes very recently free of 30 Oxyria digyra Ceaver som to texte. common on high sloper and Engl 1 / 31 anabis alfring flowers white rare on high ledges 1 v 32 Laxifraga groenlanding flowers white rare in with course 14 33 Cardanine bellidifolia fruit, ever. rare in roch crevice, Luzula spreata ran on rock ledge 1 V 85 Draba lactala adams! ras on well ledge 3 v 86 Cassioffe Tetragona 1000 m. En Tangled boars mat. dominant in sheltered places 1 1 27 Laxipaga cerma coma dhis occasional in moist allis Flowers white hubbils 2 1 88 Lalix myrsinites 650m. prostrate common but this form rare 1 189 Carest capillaris Coom. rane en lovres slopes / risetum spicatum rare on lower grassy steps 1 191 log alpina common on lower grassy stops (with #32392) 1 / 92 Pod alpina va. nivipana 518 -n. common on lower grassy slopes, with 3 18011 1 v 93 Cystopteris montana 5 75 m. common losally on morny surper 94 Thalictrum alfinum n. alfriman Sion. leaver from glossy above. occasionally in wet banks 1 195 tapilraga oppositifolia prostrute me in wet bapty

136 1950 Sweden Laphland, Torne Lappment 37 3289 i Euphrasia frigida Progred. 5 Carl May raum ledger 3 1 97 felaginella selaginoides 6 som. plant frontial, while. common locally on moist slother 1/98 Tofieldia pusiela common locally on moist banks 500 m. flower white. 1 v 99 Lalis hastata 600 in. prostrate common dower stopes 32 900. Lalin reticulate 500m mostrate & 9 common on moist bank (extending). high a slope) Salix reticulates 510 m, protrate 07 ravog 2102 falix hastata prostrate q common on moist bank 2103 falix hastata -prostrate of 1 / 04 halen orcanlis cushim plant, flowers pinh. common on moist bank (more common much higher) as agrapyon 1 05 Campanula notundifolia flowers olu common in granny meadow 2 voc agrappyon caning e reex occasional in meadow 2 1 07 agropyon latiglume spile, dull fruplish common in meadow, est. in sparse dy places 2 103 agroppin caning x latigliums 32906× 32907 common in meadow 2 109 agropyon caning x latightume 32904 x 32707 Common in meadow

1950 Liveden July 25 - east ridge of Rakhaslako above Bjorbliden Station from upper edge of ours, frest to bare plateau, on solvint, but apparently partly an acid selist, as the regetation shows a morain of acid and calcicolous types with no apparent requirity. but becoming inne calustolous Infrarad. Empetrum - Vaccinium hearty, Dryar heath mixed grans Tung, Lalix herbacea types on linger stopes and ridges, siche meadows with Kanunculus acris, etc. where There is moving water in the ground, practically bare fieracium common locally on grassy slopes very local m'ledger of noch 2 asplenium vinde Hads very local in dry roch erevices in moist grassy place 3 × 14 Chilobium local en debris at foot of wells very local, miletris at foot of wales common in upper edges of frest

Lappland, Torne Lappman 139

around smow patieles,

Carex - Eriophorum marsher

around lakes & ponds,

The birche, near the top

of the fract all seem to

be bent toward the east.

- bright yellow.

fruits dull lead green

rachines green

densely caerpitose

stems red caerpitose

petals white, prints purple.

flowers bright blue widet

- with white throat

erect, fruiting calyser rose

140 1950 Lucken Lappland, Tome Lappman 41 72917 alchemilla grower pale green local in moint de allos signed 1. 19 Emphrasia - plant purplish; corrid Ital in dry often place will upper lift purplied, but while 1 19 Carex Toon solitary and my head in grassy trust in high bench 2 1 20 augula header end in grassy truly on high franch, commin 2 11 Lugula breads conspicuously modding In grassy hunt on high bead, commo! 2 , 22 Knyula heads ever an opensy trust on high windsweft plateaus 1 V 23 Kannmenlur glaciali. L. - correla della roplish.

flower, yellow. in bare areas recently free from more en shaded, with ledger with wif 1 / 25 Potentilla cantzii flower dright yellow on sparsely regetated high slopes cae juty head, slightly 11 16 Lugula spicata in crevices in trave with flowers bright frugle 2 V 27 aztragalus olfinus v. articus common in truff on lighplateas 1 1 3 Cerastium solmonstonie! flower white. common in high rock ledges 29 Praba alpina occasional on worky area, recently for from anow. wa vially. 1 V 30 Juneus trificles L. in covice or bank 2. V 31 Cassispe tetragona low, tangled; flower pure white dominant locally 1 v 32 Campanula uniflora cirollar blue molet, calyeer rare in large with and fruits breachist V 33 Vaccinium uliginozum prostrate, flowershing common on large rocks in Dyay toa

Lappland, Tomo Lappmant 143 142 1950 Lucitan Robert type 70974 Festeren orivificana 1.1 x... common on dange ! wit. 1 vos Duda maging otension of laged provide 2 1 36 Figer for dium a motion un grante at a factor to the becasional in 9 and 1 meadows 1 1 minumentiantica mating and Marine the state of the flower bright yet ow 2 V 13 dolidags Wagaines 1 correr in meadows in lefter milliotate andy seen 2/ 79 antennaria common in meadows on alope, het, slowers light yellow. 2 / 40 Kanunculus acris! common in medical and a soft 41 Deadrampsig flering common in medous or slope 2 V 42 Melandrium rubrum Wing gardy cary an more, corally common in meadow. bright climan fring. 2 143, Gerarium sylvatieum wealthy erect; flowers common in meadows - purple. 2 , 44 Gnaphalium nowegieum ic col, involucion thering man in madeline Heaching. funcus. rue in wet bas place common in For redge march 2 147 Carex atrofuera comme in sedge much v 48 Sanifraga airjoide:
common is redy march (and gen erally) loose cushing, varying from yellow to deep orange. Lathyrus praternis and on the of oa arctica (a glance) trip by ing. Bryko



Lappland, Tomo Kappmank 143 Lorester 77974 Feature minimum 11.12. ***. ·: . common on lange ! with 1 135 Druba moneging teasind in laged post 2/36 Ageofor dium a motion in -prostrate, while 2 a. H. becasional in questions 1 1 97 Minumentia stiete medically and. Me - to date distinger 2 V 13 delidago vingaira! plower light yellow correction an meadown in life 21 79 antennaria quitietate only seen common in meadows on alother erect, of cover light yellow. 2 / 40 Kinneulus acci, common in made with a strike 1 v 41 Deschampsig flexuorg common in meddows or slope 2 V 42 Melandrium merum Wieg gande calyer, muron, evally Common in meadows bright e im son fring. 2 1 47, Jeranium sylvatium wealthy erect; florence common in meadows - purple. 2- 1 44 Gnaphalium nowegicum e cet involueres whening common in an eaderer blackish. rue in wet las place 2, 46 Carex common in the redge march 2 147 Carex atrofusia common in sedge mand common is sady many (and yet evally) vellow to delp varye. Lathyrus praternis and on the of loa arcting (or glance) trip by mrs. Progles

July vo abisho Valley 400 m. I imberline determined by avalanches, by too much snow (short veg. period) for bench (e. slopes), or too little snow (too much exposure) w. slopes (wendy). 1 / rolling meadows, Mytillin healty, etc. above timberline on sleep slope about valley. Cares vesicaria fen Kolifluction heaths - rocky ofsen places with Betuly mana. Sphagnum Foot Ungas, Lax. aizordes, Khodoslendisa lapponison, Carex microglockin, etc. ground continuously moving from frost heaving and solifluction, forming polygons of clay outlined by boulders - boulders always pushed outward, location of clay paters determined by original accidents of topography. Kome clay patches almost bare. look king pancaher, raised edges, covered by fine crust of dolomie crystale. pH very high. Somsphagnum species Tolerate high p'H - matter of some being able to live with no Cd, others needing some la. pt here very variable oven day to day. foliplaction terraces a terraces resulting from gradual solifluction on gentle slope

Jansley - [Knowle says "no, not your month peat)

Mires (with peat)

Bogs (nain water only)

Fens (ground water)

marshes (without peat)

Carex vesticary from

solid stand of C. veinains

surrounded by brelt of,

halis phylicipalia, Original

surface low- with polygons

Carex grows on clay, building

up several fret of sedge peat,

Clearing holes where boulder

patches were, These gradually

contracting, but with straight

sides because increment

of material largely at My.

on steep slopes.

with Competium, Vaccinium, mystillviles, etc. has larger of naw human a "heath peat" then light gray product larger, with rust colored larger, below, on top of a horizon.

In calcareous fen, sphagnum funcum forms large hummochs. Fen plants (calciffice) humors grow in these, but only because they have "in the their worts in the fen water below - as same age as hummochs, which are very acid.

Lweden Vvolen niaktrityal a fairly large lake tras a whomse band of when Care working around it. From end there is a few of carex and only 3 - 5 m. tell. and Enophorum, with great hummoch of Aplragnum frascum calamagnotis lapponea trisphonem string uligenesum and abundant Drosen notunifolis Occasional should of falix phylicipolis and 5. lapponin. pH of late water 7.6 The hummoch in one region between lake and fren have fred to form a boy - raised so that it is indefiendent of the fren water only by plants - little demanding species. 32949 Habenaria alba in boggy ground near 2 50 Gymnadenia conoffsea common in boggy ground near small lake 51 Rhododendren lapponicum common in solifluction heath 2 Equisetum palustre abundant in soliplustion heath 53 andromeda polifolio common in hummochs in solifluction heath 54 Lourstonea alfring recasional in soliplustion heath 55 Utricularia vulgaris common in lake marging 56 falix arbuscula common in solifluction heath

Lappland, Torne Lappmanls he buch forest in bush valley and cherally in the region is very france. trees not brushing

erect, flowers white, roots fleshy. flower punh, variable in shade. (not noticeably silvery). eract.

leaves glancous beneath, fruits dull crimen red. ered; flowers dull purple bladders purple; flowers yellow dwarf should 7-4 dem. tall

Liveden Labela tipped Lalix arbuseula (narrow las form) in solifluction health 3,58 Carex capitata common in solifluction heally , 159 Carex meroglochin common in sparse areas in solifferetion heath 2 60 Carex juncellus occasional in boggy fond margin 1 V 61 Carex rariflora occasional in solifluction heath 1 , 62 Carex chrodorhiza common in solifluction healty 1 V 63 Carex machinana? common in solifluction heatly 1/64 Pinus sylvestris 1 V 65 Pinus sylvestris isolated trees in bird forest July 27 - Djupviken, north shore of Lake Tornetrask Sparse birch frest, much decadent because of presence of Lapprettlement. 420 m. in sparse bench growth in village 2 67 Lalix philicipalia in edge of pand, norted on dry gravel, recumbent in water 66 Menyanthes Trifoliata L. common in boggy wet place 19 Cardanine pratensis rale in boggy wet place

Lappland, Tome Lappmants 149

prostrate dway, shrub.

caespitore

culms solitary

not densely calpitors.

trees about 10 m, tall,
leaves persistent 6-9 years.

in large dense clumps

elevated on their own dead

older parts.

small tree, possibly showing hybridity with B. mana

should a m. long; fruit

pale yellow.

corollar white, turning pinhich, anthors deep purple. flower lavender- pinh

150 1950 Aweder - noway Palece Type 32970 Potentilla palusti, (L.) Acop. common in boggy wet place y 171 Galium en lumps of trust on total 2 v 72 antennaria 2 1 73 Euphrasia in open grazed ground 1. 74 Careja in truly at top of beach 1 75 Campanula rotundifolia in truly at tot of beach 2 76 Kanunculus submerged in clear provid, ed poper Ranunculus replans embedded in mors, leaves ofts. Sprs K men July 28 - Sprsgaskjæmmen, 'at head of Skjomen Trova talus of great granite boulder at boot of high walls of find. 77 antennana divica endges common on grasny flaces 78 antennaria divisa 79 Lotus corniculata rare on grassy ledges in talus 30 Cetula alla va. abundant tree locally on talus 31 alchemilla alfrina abundant on grassy ledges and slopes on tal

flower deep maron

flowers pale purple with dark purple lines and yellow patch in throat.

flowers pale blue-violet flowers white, emersed.

emerging.

leaves green above, of
rom.

rame; or

flower bright yellow

Tree 4 m. tall - population

polymaphic
flowers pale green

152 195° noway

2 ×982 Dryopleis

common between webs of talus

83 Arenaia

common in grass on sandat top of beach

84 Polypodium rulgare

vecasional between with of talus

85 common on wet sand at top of beach

86 Stellaria

in grassy place at top of beach

87 Dryopleis

between webs at foot of talus

48 Cystopleis:

between great with at foot of talus

189 Circaea alpinab.

between great works at foot of talus

flower white.

2 m shirome slightly bitter, then becoming sweet, liconico fluos.

. 1 m. prostrate

i -ru

2 2.

2 -

m stolons delicate, white; flowers white.

154 1950 Rweden Luppland. Tone Laplomark 155 Large herd of reindeer seen uly 29 - northern stopes of grazing here. Many photos Missontjano, 9-10 lsm. taken, but light very from. 0. 1. e. of abisko 1000+340 m. middle alfine belt, grany and treath - like areas altem ating with wet broggy areas on lower slopes boulder frelds and talus of large fragments of schist above, mostly rather calcarers 1000m. population showing 32990 Eigeren uniflorum L. every variation in color in wet marshy place - of brain from white to deep purple. ampletely bulliferous Larifuga folislosa except occasionally the terminal flows. in moist place against large works 1050 m. flowers yellow 92 Kanunculus pygmaeur on bare ground, recently free of snow "E undaschbenes" of the 93 Engers uniflorion L. swedish bolanist; hours purple. on open sparsely regelated bouldafield 1100 m. erect flowers yellow. 94 Kanunculus nivaliz (possibly by hid with R. pygmaes) open ground recently free of anow 1200 m. prostrate, blowers white. 95 Cerastium lapponisium (?) boulder field flower yellow. 96 Kanunculus prygmala under overhanging with on steel stops. 125 m. flowers white 97 Laging caerpitora in wet morry placer leaves glaucous; petals pale yellow. 98 Papaver radicatam Rottle. on steel talus, common 1340 m. 99 Draba nivalis Lilj. in mossy welly place on boulder freels Draba) raby lactary adams.

Lappland, Tome Lappmants 157. hweden 1340 m. culms solitary common on bare ground in boulder, 1300 m. 3 v 03 Fryula andica Pelytt. THE M occasional in wet moss flowers white, stems 1342 m. 2 104 Cerastium alfrinum L. ascending. common on boulder field flower white, stems according Ostenf. 3" 0; Cerastium edmonstonii (Wats.) Much r to prostrate. common on morny place on boulder field leaves somewhat 1300 m. 3 106 Kanunculux glacialis L. fleshy, flowers very common on boulder fields varying from white to marrow, Jaces and talus, in very wet or dryich small mosts or tufte, 2 / 07 haxifraga groenlandica L. - flowers white. common in most placer 1201m solitary culms in met mosay place on lower stoft culms solitary 09 / risetum spicatum (L.) Kicht. occasional on lower boulder fields 2 10 knophnum vaginatum L. common locally in wet morry caespitory common in wet morry stopes 1 12 Luzula wahlenbergir Rups. occasional on wet morny slopes heads modding 1 13 Luzula spicata (L.) DC. occasional in wet mossy sloper 1 V 14 Lugula confusa (Lindle.) Buch. common on wet morry slope, myarous 1 19 Deschampsia alping (L.) R. # 5. occasional in boulder field (17 antennais carpathica (wg) Bl. 7 ting. common on higher slopes

158 1950 Aweden 33019 Engeron uniflorum L. 2 bouldes frield , 1 20 Equistum avense L. common or boulder frield 1 / 21 Cassofre Cetraging (L.) D. Don common locally on boulder field. 2 V 22 Salix polaris x herbacea? local in moist raving-bottom 1 23 astragalier 1 24 Laxifraga tennis (Wg.) H. Am.
common in open wetlish places common open grassy stopes 1 / 26 Hieracium alfrimum L common locally on marine, July 29 half way between abisho and Missortjans with birch woods in extensive gently sloping heath 1 27 harifraga cermia L. Gral in møist bare places 2 28 Errophonem scheutzeri toppe Eveal in marshy depression 2 1 29 Juneus biglumis L. common is moist depression 1 / 70 Cardamino pralensis L. occurional in mont place 2 V 31 Kubus arcticus L. abrundant very locally

Lappland. Torse Lappman 159

1101 m. hairs nearly while

flowers white, modding.

forming a dense mat
(leaves searcely toother, follide,
pubercent)
flowers purple

petals white a pinking

flowers bright yellow.

flowers white bulbils red.

culms solitary

caerpitore

flowers purplish white

petals rose-pinh.

(said not to fruit at this netitude)

Rappland, Torne Lafenment 61

In the tremula frames padas talnus incana mixed with betala and forbus aneuparis in fresh, guite polymaphis, some trees showing pendulous twigs, all showing smooth bank. Those on talus a ledger gruite different on sthist and dolonite. Many fens and bogs of various souts on the flat tenaces. Sphagnum not too abundant, but other morses very muchos.

dish puplish.

tifted

scapes ened.

ered; plower, bright rose purple

Lappland, Tome Lappment 163 162 1950 Luceden struly m. lall: Riber spicatum soft. lapponicum fiit. fruit mmature Elipactis at companies Refifen, Hebritas plower varying from dult frink to maron. common locally on steel frontalus 2 1 41 Vernica fruticans facq. common at base of elift 1 V (42 antennaria divica . 1 43 antennaria droica L. on steel open talus 1 V 44 Dryopteris robertiana (Hoffm.) rare at top of talus at foot of diff nich woods on Former slopes and terraces. leaves pale green, spotted 45 Orchis maculata L. with penfile, blowers fall penfil podd shot spotted with deeper purple. 41. Carex vaginata Tausch. grassy hummoch scrubby tree 2 m. tall, 47 Lalex nigricans var. borealis (fr.) apparently damaged by frostning edge of boggy opening 48 Lycopodium annotinum -. in patch of heath low showle, 0.7 m, tall; 2 / 49 Kubris idaens L. - flowers white. oceasional small tree 6 m. tall, 30 Populus tremula L. - leaves unusually large. common flowers bright yellow. 2 , 51 Crepis paludosa (L.) Moench. occasional in wet spots and raving small tree 4 m. tall. \$ 152 Lalix negreans var. borealis (71.) oseasional in woods rhizomperect. (some plants 1 5) Cithyrium filix feming (L.) Roth. much larger) dominating undergrowth in some areas

164 1950 Lweden 33054 Mulgislium alpina common in somewhat often spots 2, 55 Dryopteris austriaca (Joeq.) Worm. occusional 56 Rumen acetora var. lapponicus (Hit) common in somewhat boggy ofening 3 × 57 alnus incana(L.) Moench common component of frest v 38 lais quadrifoliq L. rare at edges of some mine. r . There ra catilist. emmen LO Dozopleris plegopleris (L.) common 61 Huracium local in small opening 2 1 62 Melampyrum sylvaticum L. common 2 63 melampyrum protense L. occasional, common locally 64 Mattering struthropleris ... dominating undergrowth locally open fen, with mostly other mosses than Sphagmun 65 Trigloshin palustals L. 66 Eriophorum latifolium Hoppe common 67 Salix retralata L. very local (& selaghnella selaginorde (h) tink

Lappland, Tone Lappman 165 erect flower blue puple verns impressed above, surface dull. small tree 6 m. tall, others larger. folowers green low hord, why family red with your blaver but leg har my flowers bright yellow. flower tright yellow flowers white at base, pale yellow distally. forming dense tangles 1-2 m.

erect

spike, pendent

prostrate, spikes fruple

spike erect, protruding

from moss

166 1950 Rweden talus and ledges at foot of cliff of schrist, open with a few trees 14 rare, at foot of talus, in grany spot 1 70 Draba hinta L. rare on ledger 71 Cystopleis fragilis (1.) Bernh. nare in Cremes 1 12 agropyon canimum rare on talus 1 73 Populus tremula L. common dalur 74 Melica nulans L. orcasional on talus 2 / 75 testuca orcasionalin ledger 2176 Deschampsing common on ledger 1 77 Juneus occasional in ledger 3 178 Betula alba van. tortuosa (tel) common on talur 1,79 Ltellaria gramines L. cornon on talur

Lappland, Tone Lappman 167

frend dul above

tree 5 m. Tall, leaver fraler beneath.

caerfitore

eaerfitore

densely caerfitore

small tree 5 m. talf

flowers white

July 31 abishs Östra
willow thickets around
settlement

333080 Salix nigricans var. brealis (7n.)

31 B1 Salix phylicifolia L.

31 82 Salix hastata L.

31 83 Salix hastata L.

July 31 1.5 km. e. of abisho Ostra Subalfine birch words with open Empetrum heaths 3. 84 Lycopodium claratum var. lagopustary. in open beath in open beath very local on railroad cut very local on railroad cut

in birch woods.

ang. 1 - north ridge of Mulia Mt. south of Bjorkliden 500-1160 m. Timber line is telow 500 m on this side of the mt. , along Kappayotak R. there is birch frest. soll profile shows about 12 cm. of peat, in 3 layer - a filrons one, an amosphous dark one, and an amorphous gray one, below this a typical light blue-gray product layer of very fine rand, then a about 12 cm Unich then a yellow from deposition layer. This ground shows no frost disturbance. about timber-line, clear to summit

-shrub 3 m. tall

-shrub arsmalf tree 4 m, tall

-low shrub 1 m. tall

low shrub 0.5 m. tall.

dense colony covering several sq. m. flowers rose pinh, very few fruits set, there immature.

extreme evidence of solifluction due to frost, and a practically agonal typicalitie. The hasis roch is schist and the regulation primarily that found in calcareous localities, but much mised with species of more acid preference. Variation seems correlated to a great extent with thickness of snow as well as with the disturbance of soil by frost.

Lappland, Torne Lappmark 171 170 1950 Sweden 600-710 m. prostrate should very 33087 Belula mana close to ground have (varies common, dominant in certain in bloght acc. to amount of snow protection) aspects of low compact heath, prostrate, leaver very myse 2 × 88 Kalis reticulates petioles and fruiting calling common in low heath, especially marion red. Dryas octopetala beatly. 1, 39 Carex disturbed place flowers whitish with 1 90 Euphrasia purple and yellow in throat. disturbed place 2 9 Minuartia stricta disturbed place very small tufts. 192 Juneus Triglumis oscasional in disturbed place rufte, flowers bronze green 3 y 93 Chamachis alpina (L.) L. Rich. orcasimal in mossy place in solifluction area flower yellow 2 91 astragalus frigidus occasional in disturbed by solifluction wifts 1 1 95 Carex capillaris Common in disturbed places and those bare from frost movement 2 4 96 Dryan octopetale prostrate, scales erect. abundant, dominating much of heath, very early primer on areas have from frost movement flowers white. 97 Cerastium edmondstonii (wats.) mun ortenf. occasional on moister slopes somewhat eachilos. Foom. oscasional in very low heath 300 m. culms almost round 2 V 90 Criophorum local in vet morny places

Lappland, Torse Lappmach 173 950 Lweden 93100 Caren 701 m. rather uncommon in low heaty 352m flowers white, stigs styles Pyrola notundifolia

scattered locally in low heath rose furfle. rare in top of low weby bluff common on top of low rocky blift flower white willy 1 1 94 Hinguisula alfring yellow within common in steel stope toom. involvere with dark 2 105 Erigern red tiles, rays bright common locally on steel slope - nore prink. in low heath flowers white. 06 Diapensia lapponica common in very low heath follicles red. 07 Laxifraga oppositifolia common in rock crevices and ledge 2 08 Trisetum spicatum common at base of small diff on grassy talus 1000 m. 09 Criophoum in wet place on gentle slope 10 Calamagnostis lapponica (Wg.) Hartin. spiles burple. common on grassy stoper Luzula wahlenbergii race on morny grassy slope 12 Luzula common on mossy grassy slope follicles red. 1 13 falix herbacea common in bare top of sprin (with 9. potais) follicles reddish 14 Salix grolais occasional in bare top of spin (with 9. herbacea

Sappland, Tome Lappmants 175 1950 freder 1050m. nags yellow 33115 Taraxacum local on wet bare slope recently free of snow file plant very dwarfed. 1 16 Vaccinium vitis-idaea flower white with occasional in very low heath frink tips on windswest high slope 17 Carex bigelini? local in bor shot on lings windserefut slope pelals yellow, very small 18 Potentilla local on almost trave wet slope, recently freed more in by local collecta) ang., abish Delta (brought 1 19 Primula stricta in wet coarse sund aug. 2 Bjorkliden thickets around village. subalpine frest zone shoul 1.5 m. tall 20 Lalix lanata vas glandulifera single think in small thicket ered, petals white with 21 Parnassia palustris green veins. common in ravines herbage aromatic, rays 22 achilles milkefolium 1. white. common generally shout 1 m. talf. 23 Lalix lanata common in thickets and along trails ang. 2 | hm. a.e. of Bjorhliden moist subalpine forest, of birch, Lorbus, & Lalix small tree 4 m. tall 24 Lalix nigricans var. borealis small till, codominant in

176 1956 Lweden Laly to nigreans var brealis something codominant in frest 1 1 16 Equiselum dominant in ground larger in certain aspects of finest 21 27 Lalix glaves common in sparser placer In frest aug. 2 - near latte strove east of musiga mt. open heath birch frest on tussoch 28 Gusetum very common 1 29 Equisetum oreasimal aug. r abisho Ostra open heath buch frest 30 Oxytropis common in disturbed places. subalfine facest on watter side, par Bjørbliden, has more diversity of treas than in dryer frants as at abisho Lalix, Lobur, Populus are all important components, the first two

citomost as much so as the birch.

Much of this is of the meadow

birch Ginest type, where the

Lappland. Tome Lappment 177
small Tree, bark gray.

shrub 1.5 m. Talf

drooping distally

densely caespitors, decembent; flowers openfile, puit immature

"field larger" is of a dense leveriant growth of herbs in contrast to the "healh birds in contrast to the "healh birds brief bras a close dense mat of Empetrum, Vaccinium, Connus, etc.
The weadow type occurs where the is always and grown when the Ca is light water, orly. evoler the Ca is light

The fivedish ecologists
seem to ascribe the accumulation
of now-human to the
scarcity of earthworms.
I only sow one earthwormthat above timberline on Muolija.
Further south, where
"mull soils occur, they
are apparently abundant
and are considered responsible
for the mull soils.
The question of why they
are scarce in the north (also
on heaths elsewhere?) remains.

arg. 8 - cons. with Prof. He maintains that the only ratisfactory method of systematizing regulation of from Brann-Blanquet florestic approach - that physingnomic classifications associate types not closely related and reparente related ones - i.e. that the health bird, firest and the meadow buch front (dul.) are not close, but that the latter is close to the alvetum incarum of central Emolle, and Joven to the geranium -Trollius-Ramunculus meadows of Lappand than to the heath birds forest. moustains that a system must be built up by combining known smaller units rather than by subdividing known larger ones - says that this is the weakness in Du Kiety ets system. Maintains that a through knowledge of floristic composition will lead to an understanding of ecologic conditions -

i.e. water, mineral context,

the Maintains, further,

that dynamics can not enter into building a system of vegetation, that only on a local basis can dynamics be brought into harmony with it.

haw a field where the forme locations of shocker of hay were muchel by very conspicuous spots of Chrysanthemen bucanthemen in the grass. The evident in between. I supposed the regitation to have been killed and the prime C. l. to have come in. He subposed that it was a care of survival of the C. l. from the original veg. Could only be determined by examination of veg. for domant C.l. plants.

Must ash about whether ecologis equivalence of species is considered in this flaistic scheme. aug. 11 - North German Plain - Schleswig - Holstein flat, low-lying land, intensively cultivated except for and spartined, except for fence- nows and occasional heaths. The heaths deminated by Colluna v., if stightly raised above level of surrounding land, have a few inches of freat ever sand, peat often broken and sandy areas expresed, if low, then very thich peat which is being ent and slabs piled up to dry. Calluna is in flower on low heaths, not on high ones. Principal field crops are sugar heets and outs, some protatoes. ime callage

fore ault ground looks prodyslic, other spenty, some intermediate lovery. no forests of consequences, seen. Primited tree, seen. Primited tree, seen, forest tremula, sow - Populus tremula, Betula alba, quercus, Corylus, lalia,

Pastures extensive,

green, apparently contain

a certain amount of

Ranunculus assis, but

not serious amounts.

Obviously mixed

meadow composition

Low bying areas drained

ly shallow para llel

ditches with marsh regetation

Phragmites comm. in

deeper ditches.

ang. 11 - along n. n. from Cologne near diege a plateau ent by ravines in which the railroad runs. The steep slopes of the ravines are covered by a scrub vegetation with scattered trees. Composition not apparent. Origin may be frire, but not evident. Most of Belgium grite entirated.

to set aside a arear of somewhat natural registation as seserve.

Such things are government enterprises in Belgium.

Their Institut des Pares nationals du Congs Belge is an amazing organization. It is not only to promote the setting aside of reserves but especially to promote scientific study of them. It is government finance but independent. Lends many expeditions, maintains an enormous file of shots.

Ohotos available for distr. for proper purposes. Bet. Brussels and France (or n. - Pari) the land is largely ent. Beets, potatoes, rats, some fruit trees, one ting patch of maige

most common trees sen
in fence rows, small
patches of wood, etc. are
Palix spp. Populus epp.
quercus, etc. Fraxinos
Plorbers leve commen.
Pobinic pseudo-acacia
is very common esp. un
cut banks along m.

patch along the in. was largely dominated by Condthera (biennis group) also Tanacetum, actemina vulgaris. Chenopostium 2/1. (?).

Large crical pieles of debris from coal mines dominate landscape from coal mines dominate landscape Aug. 12 - n.n. from Fergnie & Paris mostly cult. fields pasting rows of Sales, Populus. almi, etc. mostly pollarded. Fruit trees, est apples abundant, scattered in fields and hedger rather than in orchards. north of Landreise and second growth of various ages. One section of closed fresto, 30 m. Call, very dense dark within, tall straight Cunhs. along r. n. Janks Tanacetum is the most abundant and obour weed, achillen common also. Lonewhat s. of Landreier mod finishedly the country becomes more offen, bields larger hedges for less obsiever grain, potatoer q beets are the common crops. grain is ripe, being harverted. Fruit trees much less common. Country gently rolling. forth of Birrigny is an area with patches of frest and open field. Birches common in frest.

South of St. quentin are vast fields sow largely plowed, but partly in Lugar beets. Occ. patcher and now of tall Populus. a little alfalfa. Hedges uncommon. l'astries scarcely ser Fruit trees only very local, near houses a villages. Rows of Platanus & ace near villages. Robinia commen along in embrankments cuts, Tanacetum much less common. Plantations of Populus near mennessis. ilso 1. of Tergnier. Viscom common ou trace, at least halix + Populus, s.of Terquier. Lalix thrickets ales commen. from here south, because of these plantations of Populus, hour, orchards, thickets, etc. the country assumes a verdant somewhat wooded aspect. This is betrayed only when one notices that the proplaces are planted in rows. a few real pretities of freed in hilly country around Compeigne quercus, ele More so toward Paris, heveral Narge wooder patcher

Aug. 18 - Bois de Vincennes, Paris
This is a nather offen word,
largely quereus robus, with
some aesculus, acer platanoide,
a. pseudoplatanus, Frazinus
excelsin, Robinia pseudo-acacia,
Carpinus Ulmus, etc. with
Crataegus and young trees
as an understay. The general
beight may have been about, 5 m.
crowns scarcely or not touching.

33131 Crataegus

common in seemd story of fruit

1 32 Stackys

pare under trees

2 33 Polygonatum common under trees

3 34 Polygonum common losally under trees

2 35 geranium under trees

3 76 Ciraca Entetiana occasional breatly under trees

3 37 Rhamnus

The love layers are much disturbed by human activity, with paths everywhere, and grassy shots where people picnis. The cover between the paths is a layer about in deep of Rubus (2 2p.), young trees, Untica diving,

(population variable in leaf shape)

flowers white

white shape, white, fleshy,

stem erect and arding,

fruit blue.

tangled patches, flower white.

aromatic herb, flower

erect, flower

erect, flower

white.

malf tree 4 m. talf,

fruit immature.

VI ang. 20 - Forest de Fontain blen

alarge area of frest, about
17 dos hectares, surrounding
Fontainblean, largely
managed for timber bout
several large sections left
undisturbed as "series artistiques
not touched except as camper
and bibers disturbe them.
The vegetation is very well
correlated with geological
structure, because of difference
in resulting substrata.

Fontainbless's

maint in clay in the second of the second of

on the Brie limestone is a tall rich frest, 20-30 m, tall, of deciduous trees. It varies locally from almost pure

beech to almost pure vale,
more often to oak - humbeam,
sometimes vale - beech - humbeam,
with a pew other species
such as Fraginus, etc.
The amount of undergrowth
waies from rather dense in
oak frest to almost more
in beech.

In places where the limestone is thin or almost washed away, the frust is serieby, mostly orale, forbus, some fine, quite a lot of humbram, some beech, it here it suffers more from frie. Robinia pseudo-acacia behaves as a weed tree in places where fire a clearing has opened up the frest.

The sand under the limestone has considerable calcareous material deposited in it, esp. in a layer near the top. If supports a good freest, mostly oah, but with hanbeam and prine. I passe undergrowth. hees 20-25 m tall. large dense colonies of Chimaphila repubellata were seen here. This is a limited type because the sand washes away readily. The sandstone larger

is rather hard and formi an extensive plateau, in places evoded into y int boulders and wierd straper. The freed on this all appears very secondary. It is lestuly and frine, with some walk and a little tunbeam. The trees are not large and old, though nome of the fires may be 4 dm. thick. It inas probably mostly been burned relatively recently but at widely different times. Where it is often it tends to have Callung as ground ever, where closer, I teridium! alayer of dry heat is common over the white producted sand, except when recent turning lac removed it. In open places are large stands of Callung

with some Erica. Where large fires have been there are n, servey red and pine. to frine aways seral are is likely, trouver, . may be ed be difficult & ence in such an were toath y arey. June bruse puro ms of fortainflen oach - fring fout brich mer sch will some sch bund come bouch, where den burned off. bey have heath. paraleting Jones frolymorphic, the sale- there reare a few myrning smorth and Carpina Jount Tall beach - walk -., mostly more or less dark and heavily split and ridged. no apparent habit or leaf strafe difference correlated with this. The leaf size and outline varie much, but obscured by the variation on one tree some fruitvery young, with consequent large, leave, tree 10 m. tall, evoren rounded shoul 1.5° m. talf. fruit ism mature.

small tree 4 m. tall

fruit red.

33138 Guercus pedusadata robus L.

common on lower sand plain

gentinen vulgare d.

common in serubly forest

vecasional in serubly frest
at contact of calcarous and sand,

VV

finestone tall beach - vale -Carpinus freet hand Tall vals-pring bench on. sandetine buch - pring with some och burned areas become heaths out - pring fruit sand some buch some heather

Brie chathe sund sandstere 3-7mi////// while oligacin Fortaineble Beauce limenton (Cel.)

with some Erica. Where large

is rather hard and formi an extensive plateau, in places evoded into great boulders and wierd strafts. The frest on this all appears very secondary. It is Betuly and frine, with some walk and a little hunbeam. The trees are not large and old, though some of the frines may be 4 dm. thick. Las frobably mostly been burned relatively recently but at widely different times. Where it is often it tends Is have Callung as ground ever, where closer, teridium. alayer of dry peat is common over the white producted sand, except when recent burning has removed it. In offen places al large stands of Calling

frees have been, there are extensive heath, slowly coming back to bird and pine. It is said that the frines are all introduced. Ferend are present. It seems likely, however, that P. silvestic may be nation. It would be difficult & explain its absence in such an extensive sundy arey. the level plains of fortainblen sand have fine & birt, where they have not been burned off. When burnd, they have heath. the birches are polymorphic. asusual. There are a few with trunks smooth and . white to bar, mostly more or less dark and heavily split and ridged. no apparent habit or leaf, strape difference correlated with this. The leaf size and outling varie much, but obscured by the variation on one Tree some fruit very young, with consequent large, leave. tree 10 m. tall, evoren rounded shoul 1.5' m. talf. fruit immature.

small tree 4 m. tall

fruit red.

33178 Guereus pedusculata robus L.

common on lower sand plain

Gigustrum vulgare L.

common in scrubby forest

reasional in scrubby freet

at contact of calcarous and sandy

33/41 Chimaphila umbellata L. IC forming large dense colonie, by underground in tall rat frest on sand, abundant but very local V32655 , tall 42 Splus in scribby oak frest 3 27156 1 trep 43 querous 32 177 - 32 981 dominant in serubly only frest on this calcareour bed ver sand. white 44 Betula allo van isolated tree on health on sandstone was base. several 45 Carpinus imestone) rare in sandstone platear, common on ill 46 Guerous petrala (a petrala x robus) es occasional in birch frest on sandstone plateau low. 47 folidags vingamea L.
common between boulders on everal 48 Lonicera lesly. nare on great randitions boulders & fruit 49 Juniperus communist. when rubbed. between great sandston boulders, to weeking 550 Petuly alba va 15'1 dominant on sanditione plateau ugaze. vas 524 Hex aquifolium d. immatur race on sandsline plateau (abundant in somey.... 5) Dryspteis austriaca occasional on sandstone plateau in thin bird woods. 54 Juneus in wet place on sand on sandstone platony 55 Juneus billace on sand on tree 5 m. Talf, trunk brongo greenist 54 Populus Tiemula leaves trambling. reasimal on sandsten blateau

132655 P. 81. 327154 32977 - 32989

Lein et many 197 196 1950 France should 2 m. tall, briges red. 33157 Rosa coming L. occasional on sand in buch freet tree 8 m. talf, tung, weefing, 58 Betula alba man back white to base. fairly rare on sand in birch - och for rest tree 5 m. talf, spreading occasional on sandstony plateauring bird front. fruits dull brownish. small shrubby tree 3 m. tall. occasional on sand in bridg breek. large wanded spreading 61 Greezen petraea occasional in bird, frest on sand tree 10 m. tall, 20 m. wide. stender showl 3 m. Telf, 42 Rhamnus sparsely transfeet, berie, black. occasional in birch forest in rand fenner tright yellow. 47 Potentilla tornatilla rare in shade of great sandston boulders stender tree & m. talf, branches 64 Getula alba var. drooting, back white, rough towaster diminant in frest in rand flowers bright purplish 65 bieg tetralix d. local on heaths in openings trink. and sparse place in birch freed in sanda tong plateaus 64 Jalium ray in sand bet great sandsten boulders buil blue to som and 67 Prunus in occasional in open heath glower blue-violet on sand plane surrounded by birth 68 Vernica spicata d. in birch words or sand flower bright yellow. 69 & Helianthemum race in birch woods on sand dull rose-magenta. 70 Calling rulgaris (J.) Hull dominant on open heaths and in sparse bird frest on sand and sandstone platean. shizeme not sweet and 71 Polyhodium vulgare L. with searcely any living odor. common on rocks a randitore

198 1990 France - England

33172 Salix 3 Subsecurounding small fromt on randstone plateau

73 Melampyrum prating L nave between sandstone brulders in birch word

24 Ranunculus flammerfad.

1 75 galiern palustre L'occasional on wet ground around pond in sandstony plateau

76 Fagus sylvating L. Sominant in some parts of frest on Bimestone

- aug. 27 - region of Tring.

rolling Cultivated land, spansely propulated; fields separated by Crataegus hedger, soif a white chalk with rather thin gray topsoil, considered rather pon soil. Rel Clover, O notosythis, bolium o grain raised.

between Tring and hedgerows

Fitationed Filationed Form. r.w. of London

77 Grataeguregerows

78 acer campestris var. with pub. fr.

30 Lambueur nigra

200 1990 England 33131 . Rhammus cathartica occasional in hedgerous (82 Brysnia diving 183 Pryma divisa climbring in hedgerow 84 Comes sanguinea common in headgerows 31, Turnymus emofracer rave in tredgerows 36 Tamus occasional in hedgrows 87 Clematis common in bedgerow 88 Medicago lupuling v. bupulina occasional on roadside branks 89 Cardins acardis common on wadred banks 90 Nepeta catary L. oreasimal on roadsides 91 foldage local (excaped from gardens) 92 Galium mollugo L. occasional on weedy roadsides 93 Cinsium common on weed washide 94 Medicago lupuling var. nane on weedy roadsieles 95 / rago pogon minn ockasional on weedy moderale 96 Lenecio encaepoliris occasional on weedy roadrides

shoul am. tall, fruits wife. ving, fruit vermilien. veined with darker green, should 1.5' m. tall, fruits green, lurning black. shoul 2 m, tell, vine, leaves glossy, buil immature oval-globors vine, flowers trade bronze-granis prostrate plowers yellow, print black. blowers tright purple. erect, very aromatic, glorivers white with delicate huple marking flowers bright yellow. flowers white. to 1 m. tall, flower, purple. prostrate florer yellon (note glar lula pul,) rays Jellow, much Thate than involvere. ered, flowers bright yellow

Population studies of Betula. Than collection, might be made by carrying grantities of white enveloper, about 3x4 inches. On the front flap might be printed blanks for two items - twigs not frendulous - slightly pendulous _, markredly pendulous ; und base of trunk solvite ___, black the a rough less than I m. ___, 1-2 m, ____, 2-3 m, ___. The part collected should bla dwarf lateral shoot, sett bearing as mature a fruiting cone as possible and In preferably & leave, from the lowest fruiting branch

Population studies of Betula. Than collections might be made by carrying quantities of white envelope, about 3 x 4 inclus. On the front flap might be printed blanks for two items - twigs not frendulous - slightly frendulous_, markedly pendulous __ ; und base of trunk white ___, black te a rough less than 1 m. __, 1-2 m. ____, 2-3 m. ____. the part collected should bla dwarf lateral shoot, the bearing as mature a fruiting come as possible and In preferably & leaves, from the lowest fruiting branch

2. Twigs I not pendulous, 2 sl. pend. 3. markedly pend.

7. Twigs I gladrow, 2 hairy.

4. Leaves i glabrons 2 hairy

5. Teeth on margin I Iven or regula,

a Teeth on margin I obtuse Vacute 3 accuminate a mucinde

7 Leaf aper 1 obtuse 2 acute 3 accuminate

3 feaf base I conducte ±, 2 truncate 3 obtuse 4 acute.

of Length of spile radio in mm.

to edge of exposed portion in mm.

11 Total length of bract in mm.

12 Total wisth of backing.

13 Length of terminal Cole in on my

14 tangle of lateral lober to axis

15 Length of body of fruit
excl. styles in 0.1 mm.
16 Length of wings 11 to body of fruit 0.1m.

17 Width of fruit with wings.

SKEPPSBRON 12-14

Holell Reisen

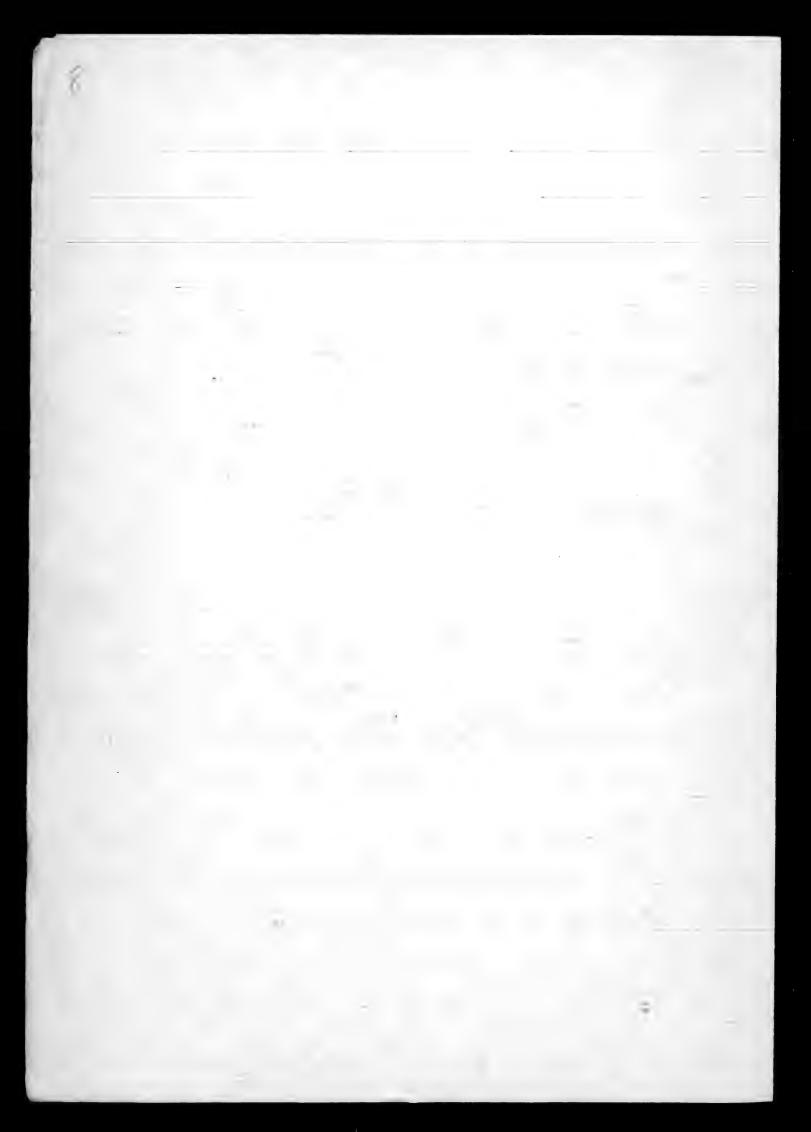


Stockholm den / 19



Stockholm den / 19

Gangland 1950 50 km. m.m. London I vy I vanglise Bessen 4 mi. m. e. Tring open down in chalk hills 33197 Lolium planted with Onotrychis in hay-field petals old-rose with deep red & purple strias. , 98 Onotrychis planted with folium in har field plant purplish green. 99 Plantago major vas. abundant in stubble-field flower white. 33,200 Lagina common or old mole hells on top of challe brill in grass plant dark purplish green 01 Euphrasia nemaroza v. calcarea cleaver glossy above, flowers basically abundant very locally in old peoplesh white with yellow eye mole bills in grass on top of challs will and dech purple striag. strong vily oda when broken, 02 Vimpinella flower white. common grassy sloper flowers many 03 Gentiana occasional en steel grany slope, dwarf shoul, almost part 04 Onous spinosa flowering, standard and beep nose, wings white armon on sleep grassy





Stockholm den / 19

ingland 33205 Leabourg flowers lavende common steel grann slope Habremand viridis rare on steel grassy slope Enghrasia pseudokernen flowers white to purplish with yellow eye and deep purple common on steel, somewhat eroded slope ray brongly yellow Carlinia common on steel grany stope flowers deep visted, 09 Campanula glomerata many plants with infl. gallef. common on steel grassystope great variation in leaf shape and robustness of plant. flowers blue - violet 10 Campanula notundifola common or steel grassy - Rope

121950 England Left. 1-9 London In vacant lots and other unorufied spots Epilobium angustifolium benecis squalidus, Buddleig japonia, and Iteridium agriclinum have become very abundant sence the war. They appeared in great numbers in the offen ground and rubble left after the bornbung and have been alrundent since, though uncommon in the city before the was.

1950 England Sept. 10 Wolsing Heath This is a large area of sandy ground n. e. (?) of Wolsing. It is partly open and partly covered by thickets of varying age, mostly of Pinus sylvestis and Betula alba. The open areas are mostly covered by solid stands of Calluna vulgans, a with some admixture of r sp. of Grea. Some are bare from recent fire. The fire apparently does not completely saill the norts of the Calling and it comes back directly. One or. two grasses are mixed here and there with the beather. The soil seems

to ensist of a thin layer of peat, in a finely divided state, which becomes more and more mixed with fine white sand as one digs deeper, until the peat disappears a few inshes down, and the sand become, gradually yellowish from a small brount of deposited irontoxide. Amall pebbles of flint are mixed with the sand.

In most areas of heather, little pine a birch, seedlings are coming up abundantly their distribution seems to be dependent on whether pine or birch seed trees are closestat hand. Me evidence was

bottom af depression.

seen that there seedlings were being destroyed by rabbits, but there was much to show that fires destroy many of them.

some areas of birch and pine manage to allain good size and make patcher of frest. The birch frust permits a certain amount of undergrowth - Rubius, ulex, etc. especially where it is not too dense, and in opening healter persists. When the fines become well grown almost all undergrowth disappears a few sprindly parches of heather

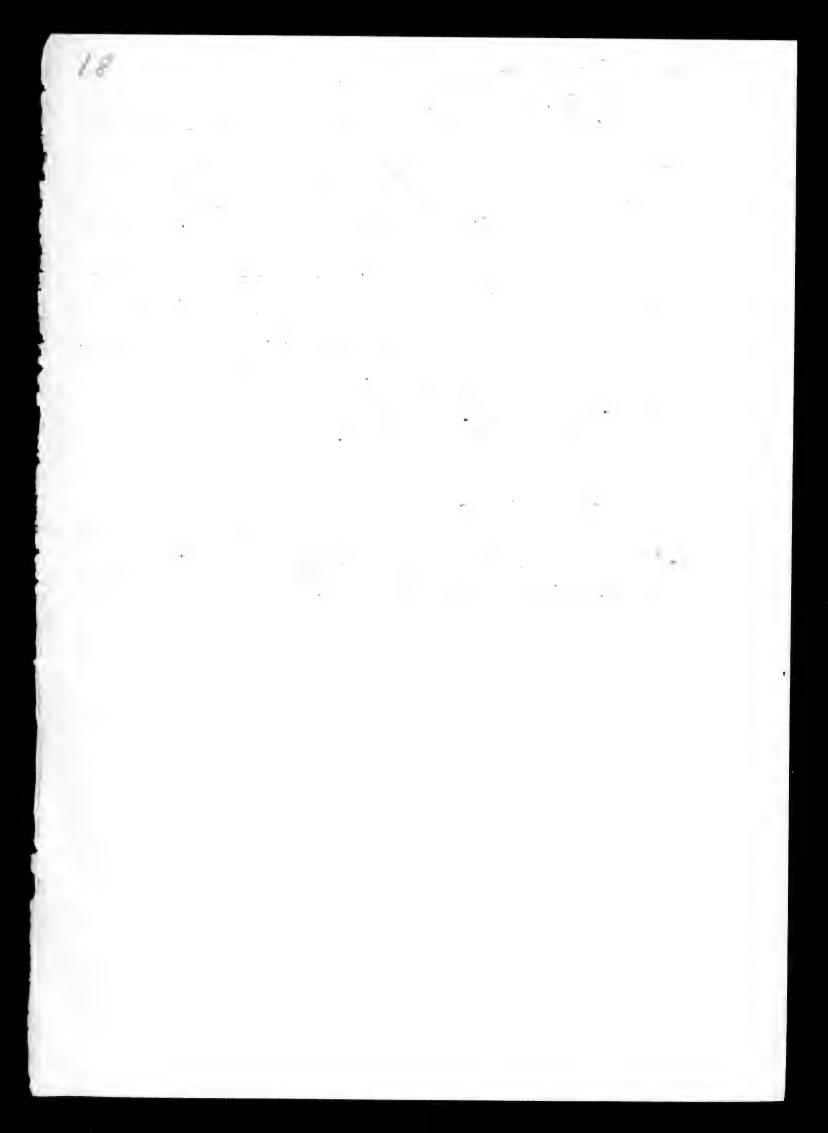
patches of more interrupt

rooting at moder.

the thereise smooth blambety. of pine needler (about 5 cm. This) The frest seems lended in these spots. In disturbed placer pathr, roadsides, etc. ulex comes up abundantly, also In rare depressions of Rubus. executions which are delp enough to be wet. Hydrocotyle and a creeping species of Juneus (form a mat. In certain shots and around the edges are givereus robus thrichets. The Betula mostly has the back black and rough at base of trunk, but rare individuals are white to base. I whereence is none and does not correlate with white trunk core size length, thickness and shafe do not correlate with publisher or trunk the back correlate, foling of leasts correlate, with mothing work rooms work mothing work proposed by shap correlates with mothing rooms by shap correlates with mothing nothing, but varies greatly.

1950 France 17 lept. 14 slopes of inactive ones are being converted by vegetation. The mature of this should be investigated.

Robinia pseude acaria comer in very aggressively on railroad ents



1950 Lusembourg Sept. 15-16 Luxembourg Ville The city is built on a low hill that is an a disserted erssion remnant in thick limestone beds. The erosion has been largely vertical and the valley sides abound in eliffs and crags. Slopes and hilltofr are Hetersively worded. It is difficult to be certain as to what the original frest may have been, as it is now so altered. Vossibly it raised from beech to Oals-honbeam, as they are very common in its makent now. One of the most conspicuous of the present-day comproments is Robinia prendo-acasia, which is extremely aggressive in disturbed areas, but also establishes seedlings in shade, especially in its own shade.

The herbaceour layer in the opening and on slother and limestone ledges is very rich, but what we would call weedy. nearly all the common plants are weeks is the U.S. Lamburus, Cratalque, Conglue, bende seedling of the Tree make up a should larger that varies in luxuriance with the amount of light that gets in

On the Trois glands helf across the river from the main part of own Pines and Betula souls as well as trees make ula large frant of the freet, though the bill is limesting and the luxuriant herb. layer suggests a vich soil. These trees seem in excellent conditions They are mainly on the when stopes and top of the brill and are mingled with querus, Carpiners, Potrulus, Robinia, Ulmus, etc.

The bircher are, as usual, a very heterogeneous lot, and the variations are not at all correlated. One tree was seen that really might be distind it had nariow rhombie pubercent leaver and extremely slander fruiting cathing. The rest are mainly of the Bi-vernessa type of glabrous leafed, pendulous palla. base, other me smooth of The base.

In the rocks of the main citadel hill of the city are extensive artificial out of the land the forme of there are lighted by electric light. The rock around they is covered by a sterile moss.

33212 moss calcareou, - randstone tunned wall.

The slopes of the bright my natural grands, are covered by a frest of quereus rober, Robining, acer platanoides, a. prendoplatanus, cilmus off. Tilia tagus etc. This is curious because of the fact that, of both the trees and Womany shrubs it is almost impossible to tell what is planted and what is sportaneous. The whole is as neat as a franks, out don not look at all tended or cultivated. Lymploricapo, is very common. 33213 asplenium rutg-muraing? in boles in old cartle wall of calcureour sandstone, rather common in places that are protested. Here, as in England, Hedera hely is often dominant in the ground ever in the mixed frest. verska finerika Linear 爾爾

in 1950 Iceland . Sept. 19 - Keflavik, on a. w. peninsula of Iceland Barren volcanic plain, just above sea level, will scattered extinct coner, basically lava flows. covered by a thin layer of ash, or possibly glacial dust. In some sports the bare lava is expresed, with little or no vegetation, at most scattered tufts of grass. In other, more eftensive areas, resually slightly lower, is a thin heath, with little peut, very much torn by frost action, with Empetrum, arctostaphylos, and dwarfed Calluna etc. well as considerable Thymus (?), Cerastium, Plantago, 24 armenia (?), and several grasses. It is so sparse that it appears is have no regetation at all from a slight altitude at 9 a.m. white frost remained on the regetation.

33214 agrostis common

15 Calluna vulgaris common

16 anneria common 17 Thymus common

18 galium venim? orrasional 17 Cerastium occasional

dense tufts

prostrate, small plant, only seen, flowers lavender maure, glossy. dense caespilose custin plant. cushions very convex, upto Idm. across prostrate, leaves whitish around edges. shorts erect, placuera yellowish. leave, whitish

Holell Reisen



Stockholm den / 19

24

The parture along. The parture along. Tripps Run has been subdivided for houses—
the course of the Run altered to cut through the some marshy play to the least of its framer course, the ground badly cut up by bulldozers.

Faifax Co.

C Co.

flowers lavensles shading To violet, bracks bronze-furth (seeds sent to Bocher.)

shrub 2 m. talf. fruits searlet.

edge of words in shallow standing water.

SKEPPSBRON 12-14

Holell Reisen



Stockholm den / 19

Virginia 1950 VV Sept. 30 Hoadly, Prince Williams. Old field, and patches of works, second growll Harrying from Pinus vinginiana to mixed hardwoods, largely vales, but with Livindentin, frazinus, ace rubrum, Conner florida etc. The old field dominated by andropogon, but with alone Solidago, aster. etc, me has been abandoned for 15 years, but has searcely any wordy regetation. a scattering of prostrate failures from me side, but not at all from the other where there are abundant pines across a narrow road. The place

I where they are coming in is more sterile and bare than the next of the field. quarty outerofts emma, grants fragments in the reddish clay soil. flowers white 33772 Spiranthes cernua rare in second-growth decidious words caespitose, rays lavende 23 aster linifolius noadside banks at edge of pine words mostly part flowering, flowers lanender-violet 24 Prunella vulgaris L. common in old field lower lying areas The In hardwood frest ground ever is Lycopodius and mixed large areas complanatum with are quite open beneath ferns, on slightly a closed canopy - heer higher ground a small and rather sparse layer of Chimaphila maculata, mitchella, etc. closely spaced - wo in

CHICAGO & NORTH WESTERN BY.

with a shrubby layer of Naccinium, Rhododendian hudiflorum, Kalmia latifolia, etc. quite spare and renevenly distributed.

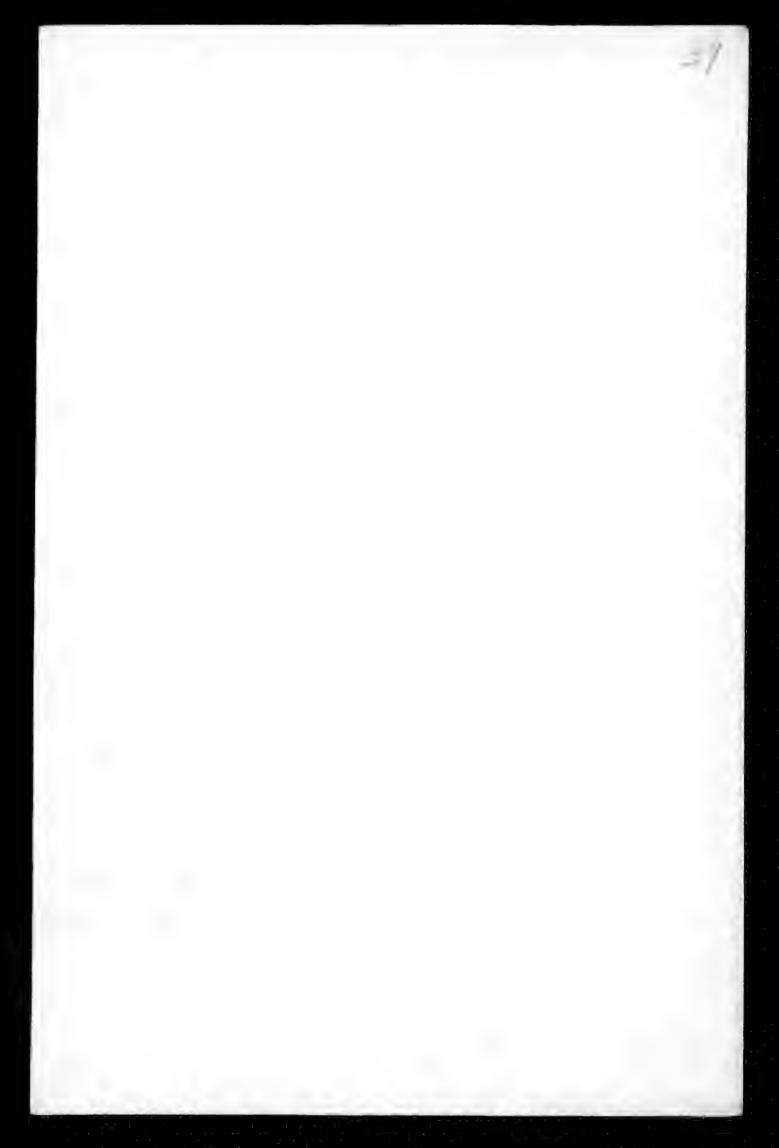
Middle story is corner florida, 4-5 m. Talf.



THE OVERLAND ROUTE

11950 Virginia Fairfax Co. Oct. 15 - Lleepy Hollow, along Trippes Rus. old spring, walled in, filled with nasturtium officinale, with Lalis babyloning nearly. and at bottom of shallow broad naving in old parture filled in man, parts with agrimonia. 33225 - Mikanig seandeng in low brush near spring vine flower pale lavende

She nandoah Walf. Park Virginia Oct. 22 - gravel Spring and visinity, Rappahannoch Co second growth frest, mostly 2500 with weedy trails and camp site. 2700' 3322 & Pilea pumila (8.) Gray
abundant on shady slopes
and trail sides 2700'ered, stems translucent. 27 Prunella vulgaris 270' flowers dech violet. common along Trails 2500' erect, somewhat glavieren 28 Chanopodium album L. around cabin site. 29 Polymnia canadensist. herb 1 m. Tall, flowers pale yellow, heads nodding. common on wooded slopes 30 fatureja vulgaris (t.) Futach common along trail blowers rose-purple flowers deep violet, lower side sulcate Lobelia siphilitiega. occasional in marshy play 32 Chelone glabra L. talf horb, in fruit only. 33, Polygonum Lametorum: twining occasional in low thickets along trail artium minus (Il) Barnh. flower, muple common around camp side and along trail



fhenandows mat. Park Virginia 41 HO 1950 Oct. 22- Bluff trail moth last Heefs sloper of broken roch with second-growth 2500 buest showing signs of an old fine. shrules 25 m. tall, canel arching, forming dense clumps. . 33235 Physocarpus opulifolind Maxim local around seefry places 36 Menispermum canadenset.

nare, one plant seen
along trail Twener, fruits blue. stringerne buried in leaf mold. 37 asarum canadense d. local on gentle slopes occasional herb 1 m. tall leaves glancous beneath. 39 Thalistrum corragements mall common, expecially along trail 40 Chimaphily maculater. leaves dull green with white along midrib. nocky raving 41 Dryspleris stipes crowded on short thick shipsome; dull above. rare on steel roch slope 42 asplenium platyneuron Mukes fertile grands erect. common locally in vole slope shrub i m. tall, flowers yellow. 43 Hamamelis virginang L.

flemandony Nat, Park. vu 1950 Vinginia Oct. 2 Big Devil Stairs second growth woods, mostly slope 25,00 shrub milale 33244 Hydranga arborescens d. common in undergrowth herb im. tall, very aromatic 45 Collinsonia canadensist. occasional on raving side 44 Cuscuta gronsrii Willd. pale greenish yellow rare along trail, informerente, white flowers. on Rubur oderatus 47 Polymnia canadensist. heads worlding, flowers pal common under trees in Hemloch grove 2400 in bottom of raving shizome with licorice flaver when chewed. 48 Polypodium vulgar rare on broken will Tree 15 m, Tall 49 Truga canadensis (2) Cur. local, small grove prostrate, dull green, with lighter veins, sterile. 50 mitchella refrens (f.) loral, under Truga steril; shizome 5, Hepatica americana (A) 16. between wells. local, under 7 suga



Virginia 1951 Vienna, Fairfax Co. Small pack of bairly mature semb fine on low ground, with some oals, rather sparse, surrunded by rather serubby young second-growth, mostly oak, with scattered prine - under pines in patch a rather spærse cotory of mitchella and Chimaphila maculata, of other common associates of this type, only a plant in the two of Naccinium vacillans, and Imilax sp. Ontob of gravel-capped knoll nearly young second-growth, largely frine (P. virginiana) and some

48 oak, mostly 2 - 4 m. tall, but a few larger valer. beneather dense stand of a tall vaccinium (0.5° m,) with a few Rhododendron nudiflerum. 33252 mitchella repenst. occasional under Tress pines, not very luxuriant 53 Chimaphila maculata orcasional under pines

Jan. 20 I mi. n. of Fairfax

33754 Phoradendin flavescen,
several clumps in a
large queries sp. tree.
not seen in any other
tree in vicinity.

beneath this Chimaphila rather common, no 49 mitchella.

prostrate, fruits searlet, searce.

ereit, leaves darb dullgreen, with light patch along midrib.

bright green, horries white, translucent, somewhat shriveled but soft.



